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RECONSTRUCTIVE VASCULAR SURGERY

GEORGE H. YEAGER, M.D.*

The surgical treatment of certain vascular lesions has been the subject of much speculation for centuries. Refinement in diagnostic and operative technics, and improvement in methods of anesthesia, combined with a more concise understanding of the physiology of the blood stream, has led to an increasing interest in this subject.

Areas that were long regarded as sacrosanct and beyond the surgeon's knife, now lend themselves to a multiplicity of reconstructive procedures. Achievements in reconstructive vascular surgery during the past decade have been extraordinary. Further developments in problems that now seem unsurmountable may be anticipated. This is because of additional improvements in the field of anesthesia, and the perfection of a mechanical heart-lung apparatus and oxygenator that will cause neither hemolysis nor foaming of the blood.

Since this field of surgery is developing rapidly, achievements thus far merit review.

On May 6, 1888, Matas operated on a young Negro laborer for a large traumatic aneurysm of the brachial artery, and for the first time, applied sutures to the interior of an aneurysm. Since that time, and with the perfection of suture methods, arterial restorative technics have evolved, in preference to obliterative or ligature methods.

Blakemore has standardized a technic of intrasaccular wiring and the use of a coagulating current to help promote an obliterating clot. Linton has reported good results with a variation of this technic. In addition, materials producing peri-aneurysmal irritation resulting in fibrosis, and thickening of the aneurysmal wall and a reduction in its size, have been successfully employed. During the past several years, technics have been developed whereby arterial continuity is re-established by the insertion of a graft of either fresh or preserved artery.

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This article, one of a continuing series, by authorities in respective specialties and subspecialties, has been written at the request of the Bulletin of the School of Medicine.

Excision of aneurysms and replacement of removed portions by preserved aortic homografts is now widely employed. From a physiologic standpoint, this technic appears to be the best thus far devised because the offending aneurysmal sac is completely excised and replaced by a pliable graft.

The use of vein grafts to replace arterial defects was first explored by Carrel and his associates nearly fifty years ago. Before World War I, vein grafting had been successfully performed both experimentally and clinically.

During World War II, a non-suture method of vein grafting, as proposed by Blakemore et al, proved less satisfactory than had been hoped for. However, the use of vein grafts in reconstructive aneurysmorrhaphy and in arteriosclerosis obliterans extended their field of usefulness in elective surgery.

Interest in the use of stored arterial iso-grafts, first extensively studied by Carrel from 1907-1910, has become widespread. They have proved preferable to vein grafts and are being used almost exclusively. Such homologous arterial grafts function temporarily as a physical strut and ultimately undergo replacement. Should grafts made of some non-reactive inert foreign material prove to be superior, the difficulties connected with the acquisition and storage of homologous grafts would be eliminated.

Obviously, certain advantages will accrue if aortic and aortic-bifurcation grafts of plastic material prove superior. Finely woven nylon cloth and orlon have been employed successfully, both experimentally and clinically. These materials can be made of any size and shape, and though thin and pliable, they have great tensile strength. They can be sutured to the end of a vessel by ordinary technics of vascular anastomosis. Experimental observations demonstrate that a strong new fibrous aorta with a smooth inner lining is developed about the inert graft from host tissue.

Immediate repair of injuries to major arteries is now practical and all major arteries should be repaired except when the additional time required for surgery endangers the patient's life. In a recent report of Korean War Casualties, after repairs of the major arterial injuries, 88.9 per cent of the limbs were salvaged, and 11.1 per cent amputated. In World War II, in a review of 2,471 cases, the incidence of amputations from injury to major vessels of the extremities was 49.6 per cent. Of 81 suture repairs of these lesions, the amputation rate was 35.8 per cent.

With the perfection of aortographic technics and the ability to localize segmental arteriosclerotic thrombosis, arterial patency is being restored by thrombo-endarterectomy, and when indicated, by arterial grafting. This procedure deserves wider acceptance, in order to save more limbs threatened with gangrene.

There are three general types of congenital cardiovascular defects which are amenable to surgical treatment, e.g. patent ductus arteriosus; coarctation of the aorta; and an inadequate pulmonary blood flow and when mixed venous blood enters the arterial circulation.

Patent ductus arteriosus, first repaired by Gross in 1938, opened the field of surgical attack on congenital anomalies of the heart and great vessels.

Since 1945, when Crafoord described a successful surgical procedure for coarcta-

tion of the aorta, interest has increased in this congenital vascular anomaly. This partial obstruction of the thoracic aorta may so impede the peripheral flow that the left ventricle is overworked and may fail in early infancy.

Coarctation of the aorta is attended by crippling or fatal sequelae in a high proportion of cases. Therefore it demands the surgeon's attention in devising methods for averting these catastrophes. The optimum ages for procedures of this type appear to be between ten and twenty years, and this fact points to the great desirability of recognizing the malformation in young subjects.

Congenital abnormalities of the heart have assumed a particular importance in medical and surgical practice since Blalock and Taussig's significant contribution in May 1945. Taussig emphasizes certain characteristic clinical findings that are helpful in establishing the diagnosis of the tetralogy of Fallot.

Blalock's shunt operation, in addition to increasing pulmonary blood flow, demonstrated the feasibility of connecting one of the branches of the aortic arch to a pulmonary artery without encountering insuperable difficulty. Potts and his group employed lateral anastomosis between the left pulmonary artery and the thoracic aorta. Holman used the subclavian artery that arises as a single trunk from the arch of the aorta.

In 1948, Brock devised an apparently more physiologic approach to the problem of pulmonic stenosis by entering the right ventricle near the out-flow track, and cutting the infundibulum or stenosed valve.

In studying vascular pathology and physiology, certain physical diagnostic aids are of inestimable value. The Robb-Steinberg technic of angiocardiology provides excellent visualization of the chambers of the heart and great vessels. Overriding of the aorta, small or large pulmonary arteries, marked cross-chamber filling, and right or left-sided aortic arches can all be demonstrated by this type of examination. Retrograde injection of a radiopaque solution through the right common carotid artery can be used as a visual method to demonstrate patent ductus arteriosus and coarctation of the aorta.

Cournand and Ranges were the first in this country to demonstrate the value of venous catheterization of the heart. Blood samples can be obtained via the catheter and the oxygen content of these samples determined. In addition, pressure measurements can be accurately determined by the same route.

Samways, as early as 1898, and later Brunton, suggested surgical enlargement of the narrowed orifice in the treatment of mitral stenosis. At the present time, stenosis of the mitral valves can be attacked surgically with considerable success. The concept of avoiding regurgitation as advocated by Bailey and Harken, has undoubtedly been the major contribution in the procedures currently used. Their method is opening the fused commissure of the mitral valve by finger fracture, or with a knife, rather than by cutting away a portion of the valve. Because of the problems of surgical approach to the valve, and the development of an effective instrument, operative procedures for aortic stenosis are evolving more slowly than those for mitral stenosis.

If a septal defect in either auricle or ventricle is large, it may be the source of symptoms, and may be accompanied by cyanosis. Such defects present a challenge

to the surgeon. Development of safe technics to correct these defects is one of the major problems now being studied.

Revascularization of the heart continues to pose many problems, and is the basis for much experimental and clinical study. Extra-coronary anastomosis by the production of communications between the coronary arteries and the blood vessels of tissues grafted upon the heart has been employed. Irritative inflammation on the surface of the heart to produce communications between the various coronary arteries has also been employed, in addition to a method of converting the coronary sinus into an artery.

POSTOPERATIVE THROMBOSIS OF THE AORTA FOLLOWING COARCTECTOMY

REPORT OF A CASE TREATED WITH INTRAVENOUS TRYPSIN

WILLIAM A. NIERMANN, M.D. AND J. EDMUND BRADLEY, M.D.

Craaford performed the first successful operation on humans with coarctation of the aorta of the adult type by resecting the stenotic portion of the aorta followed by end-to-end anastomosis in 1944 (1). There have followed uniformly good reports of successful cures of this congenital defect after such surgical treatment (2, 3, 4, 5, 6, 7). In coarctation of the infantile type and in those cases where the stenotic portion of the aorta is so close to the origin of the left subclavian artery that an end-to-end anastomosis of the aorta cannot be performed, anastomosis of the carotid artery or the left subclavian artery to the descending aorta has been performed with some degree of success (8, 9). The majority feel that resection with end-to-end anastomosis of the aorta, either with or without the use of aortic grafts, is the surgical treatment of choice whenever possible (4, 5, 10, 11). The operative mortality is from 4 to 5 per cent with good postoperative results in 90 per cent of patients receiving surgery (12).

Causes of death following coarctectomy with end-to-end anastomosis or subclavian-aortic anastomosis have been reported as a result of: Too sudden removal of aortic clamps with resultant irreversible shock; Hemorrhage from the anastomotic suture line because of necrosis; Cerebral anoxia; Aortic valve insufficiency; Atelectasis; Thrombosis at the operative site (3, 4, 13, 14).

Only two cases were found in the world literature in which postoperative thrombosis at the operative site was proved at portmortem as the cause of death. The first occurred in a 16 year old male with a subclavian-aortic anastomosis who expired 26 hours postoperatively (13). The second occurred in an 18 year old female with an end-to-end aortic anastomosis who expired 10 days postoperatively (14). Gross states that it is not necessary to administer anticoagulants to prevent local thrombosis postoperatively and that if the aorta is not damaged by instruments and a proper anastomosis has been performed, the danger of regional thrombosis is insignificant (15).

The following case is reported because it is believed probable that postoperative thrombosis of the aorta occurred at the anastomotic site and that this serious complication was successfully treated with intravenous trypsin ('Enzar'*). It is hoped that this report might prove of value to others who may encounter this distressing complication of coarctectomy in the future.

CASE REPORT

R. G., a 7 year old white female child, was first seen at the University Hospital in April 1948. She had been referred from the Peninsula General Hospital, Salisbury, Md., where a presumptive diagnosis of coarctation of the aorta and pneumonia had been made.

* 'Enzar' developed, manufactured, and supplied by the Armour Laboratories, Chicago, Ill. Consists of 90% pure trypsin, 5% ash (mostly magnesium), 4% traces ribonuclease plus cathepsin and alpha, beta, and gamma chymotrypsin, and 1% undetermined.

The parents stated that the child had difficulty in keeping up with the play activity of other children her age and that she contracted frequent upper respiratory infections, both in the summer as well as the winter. They had also noted that she tired easily and became short of breath on running. They gave no history of cyanosis, squatting, orthopnea, or edema.

At the time of the first hospital admission she was in cardiac decompensation and had a resolving pneumonia. She was treated with digitalis and penicillin and discharged as improved only to be readmitted one month later, again in cardiac decompensation and with pneumonia; she was treated with digitalis and penicillin and discharged as improved. She was maintained on oral digitalis and followed closely by her local physician at home. Her third admission, at the age of $4\frac{1}{2}$ years, was 18 months later; she was again in cardiac decompensation with pneumonia. On this occasion she remained in the hospital for 7 months. It was decided at this time that she should be placed in a foster home because of poor home environment; she remained in the foster home up until the time of her last admission, October 1952. She had been getting along quite well, had gained weight and developed normally.

The review of systems and family history were non-contributory.

Physical examination revealed an oral temperature of 98.8 degrees F., pulse rate 92 per minute, and respirations of 20 per minute. Weight was 50 pounds. Blood pressures were as follows: 144/80 in right arm, 140/82 in left arm; unobtainable by auscultation in the legs. She was a well developed, fairly well nourished young white female child of about the stated age of 7 years in no acute or chronic distress. There were no clubbing of the extremities, cyanosis, dyspnea, jaundice, or edema. Positive physical findings were limited to the cardiovascular system and were as follows:

A definite thrill was palpable above the left clavicle, over the left scapula, and over the lower posterior axillary area on the left. A left precordial bulge was noted but not marked. The heart was enlarged to the left to the anterior axillary line on percussion. A long systolic thrill was also palpable over the left precordium, most marked medial to the apex and below the left clavicle. A diastolic tap was felt at the apex. The rhythm was regular. A long, rough, grade 3 systolic murmur was heard at the apex, rather harsh and persisting throughout systole. At the anterior axillary line there was an early third heart sound in diastole, followed by a short but definite fairly high pitched diastolic murmur. There was also a rough, coarse, grade 3 systolic murmur at the left sternal border in the first and second intercostal spaces.

The liver edge was palpable one to two fingerbreadths below the costal margin and was smooth and non-tender. Radial artery pulsations were equal, full, and strong. Femoral artery pulsations could not be felt. Blood pressure determinations were as heretofore stated.

Numerous electrocardiographic studies were carried out during the periods of hospitalization. All revealed evidence of right ventricular enlargement (tall R in V-1 and AVR, deep S in V-5); there was also evidence of generalized cardiac enlargement (prolongation of QRS).

Roentgenographic studies all revealed marked prominence of the vascular markings throughout both lungs, especially marked on the left; marked cardiac enlargement

which appeared to be mainly right and left ventricular; the aorta was not well identified. The diaphragm and bony thorax appeared normal.

On 10-17-52, angiocardigraphic studies were performed after the injection of 70 per cent Diodrast into the right antecubital vein. There was prompt filling of the right side of the heart and simultaneous appearance of dye in the left auricle. The left pulmonary artery was shown to be engorged. Dye was definitely seen to enter the left ventricle by 3 seconds. The dye remained unduly long in the pulmonary system, being present there for as long as 8 seconds after injection. The abdominal aorta was identified faintly toward the end of the examination, but the thoracic portion could not be identified.

On 10-22-52, a retrograde angiocardigram was done by injection of 70 per cent Diodrast into the right common carotid artery. This was not diagnostic. This study was repeated on 11-7-52 using the left common carotid artery and revealed a definite stenosis of the descending aorta beginning 1.5 cm. distal to the origin of the left subclavian artery. The stenotic segment was from 3 to 5 mm. in length and the lumen of the aorta was reduced to 3 mm. There was very minor dilatation of the descending aorta immediately below the area of stenosis.

Fluoroscopic studies during the periods of hospitalization all revealed increased hilar markings, "hilar dance", and right auricular and right ventricular enlargement.

Cardiac catheterizations were done on two previous admissions, 6-3-49 and 11-5-49. Both were suggestive of interatrial septal defect and coarctation of the aorta but were inconclusive.

Routine laboratory studies revealed normal hematology, blood chemistries, and urine. The serologic test for syphilis and the tuberculin patch test were negative. Because of occasional temperature elevations, several blood cultures were obtained and all were sterile.

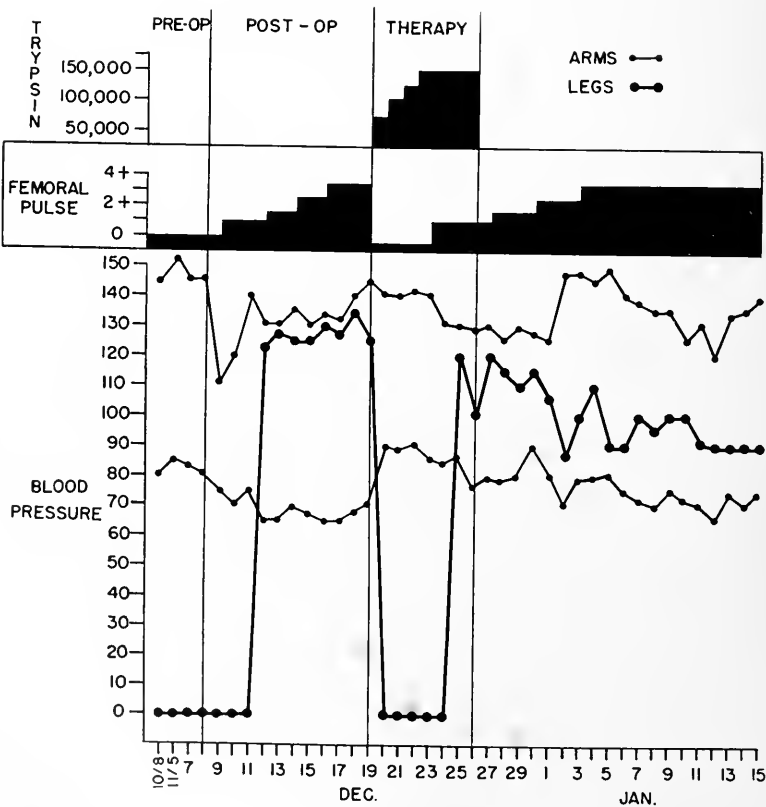
The patient was prepared for surgery, and on 12-8-52 under vinethane-ether endotracheal anesthesia, a thoracotomy was performed. The stenotic portion of the aorta was found approximately 1.5 cm. distal to the origin of the left subclavian artery and was approximately 5 mm in length; this was excised between clamps and an end-to-end anastomosis of the aorta performed using 5-0 black silk. Unfortunately, the posterior row of sutures pulled out and had to be replaced but it was thought that no undue trauma to the aorta occurred during this procedure. A definite thrill was felt in the atrial regions of the heart and this was thought to be indicative of an interatrial septal defect. No other abnormalities were noted other than cardiac enlargement.

The patient withstood the procedure well and received routine postoperative care including oxygen, antibiotics, parenteral fluids, and vitamins. The brachial blood pressure fell from 145/80 to 110/74 on the first day after operation. Femoral pulsations were felt weakly 24 hours postoperatively and the femoral blood pressure was obtained at 122 mm. 96 hours after operation. The femoral pulsations and blood pressure continued to increase gradually and the brachial blood pressure ranged from 130/75 to 110/72 in the postoperative period. The patient was removed from oxygen on the third postoperative day and the thoracotomy tube was removed on the fifth day. Temperature was elevated to 101 degrees F. on the first day after

operation and then remained normal. Fluoroscopy, roentgenographs of the chest, and electrocardiograms all remained essentially unchanged postoperatively.

The patient continued to do well until the twelfth day postoperatively when the brachial blood pressure was found to be 145/90 and the femoral blood pressure and pulsations were unobtainable. The patient exhibited no symptoms or signs of cardiac decompensation at this time. It was assumed that a thrombus had developed at the site of anastomosis and was partially or completely obstructing the blood flow. It was therefore decided to use intravenous trypsin because of its reported fibrinolytic and thrombolytic effects with the hope that the obstruction might be relieved. The patient received trypsin intravenously after determination of the bleeding, clotting, and prothrombin times; the hemoglobin concentration; brachial blood pressure; and femoral blood pressure and pulsations. The dosage of trypsin was administered in 250 cc of normal saline at 25 drops per minute. No untoward reactions were observed other than a transient facial flush at the onset of the infusion.

A total of 900,000 units of trypsin were administered in the above manner over a period of 7 days. The dosage was begun at 75,000 units, increased to 100,000 units on the second day, to 125,000 units on the third day, and then to 150,000 units. One-half the total dose was administered in the morning and the other one-half in



the evening (at approximate 12 hour intervals). It was found that the only significant changes in the laboratory studies obtained prior to each infusion were in the bleeding times, which became prolonged. (See chart.)

After four days of trypsin therapy (450,000 units) the brachial blood pressure began to decrease and femoral pulsations were again felt weakly with a femoral blood pressure of 120 mm. Three additional days of trypsin therapy were given and then the patient was started on dicoumarol; this was continued for 5 days after cessation of trypsin therapy (prothrombin kept under 40 per cent). She continued to do well and was discharged from the hospital on the fiftieth postoperative day with a brachial blood pressure of 120/72, a femoral blood pressure of 98 mm., and fairly strong femoral pulsations. Follow-up at 18 months postoperatively revealed no change in the above. Growth and development have continued to be normal. The patient will be hospitalized at some time in the future for further study, especially with regard to the interatrial septal defect.

DISCUSSION

In the two reported cases of postoperative thrombosis of the aorta at the anastomotic site following resection of the stenotic portion of the aorta with subclavian-aortic anastomosis (13) and end-to-end aortic anastomosis (14), it was reported in the former that the brachial blood pressure remained elevated, femoral pulsations were felt only once, and the femoral blood pressure was never obtained postoperatively. In the latter case it was reported that the brachial blood pressure decreased and then began to increase gradually, the femoral pulsations increased gradually only to disappear completely, and the femoral blood pressure became obtainable, gradually increased, and then became unobtainable postoperatively. The case reported here simulates the latter and it is probable that a thrombus developed slowly at the site of anastomosis with partial to complete obstruction of the aorta. The fact that it was necessary to replace the posterior row of sutures in the aorta because the first sutures pulled out might have contributed to local thrombosis (15). Evidently the slowness of the process and the presence of a good collateral circulation (which was present preoperatively) prevented the development of left ventricular failure and any consequent symptoms.

If one believes the mechanical theory of hypertension in coarctation, one would expect re-establishment of normal hemodynamics with regard to the blood pressure after relief of the aortic obstruction, i.e., resection of the stenotic segment followed by end-to-end anastomosis. Craaford (1) stated that in his first two cases normal conditions were re-established in that the blood pressure in the legs became higher than the blood pressure in the arms postoperatively and that hypertension was not present.

Gross (6, 16) states that readjustment of blood pressure requires a period of several days to weeks because presumably the vascular bed beyond the obstructed area is smaller than normal prior to operation and requires a period of time to undergo dilatation following removal of the obstruction. Also, the flow of blood into the legs does not increase rapidly and requires many days to reach a satisfactory level, con-

comitant with which the blood pressure in the arms becomes correspondingly lower. In his first two patients, he found no femoral pulsations or blood pressure at the end of the operation; at six hours postoperatively the first femoral pulsations were felt but the femoral blood pressure was still unobtainable; at twelve hours postoperatively, femoral pulsations were of improved intensity and femoral blood pressure was obtained at 110 mm.; from then on there was sustained improvement with a concomitant decrease in the brachial blood pressure. Our case bears out these observations.

Others (17) report that femoral, dorsalis pedis, and popliteal artery pulsations are felt "soon" after operation and that the brachial blood pressure decreases and the femoral blood pressure increases "soon" after operation.

Ballistocardiograms, which show a shortened J-K stroke in patients with coarctation as a result of interruption of the pulse wave by the obstruction, return to normal postoperatively which would seem to indicate adequate re-establishment of the aortic pathway (18).

Bing et al (7) studied 23 patients who were operated upon and found no significant deviation of cardiac output from normal. Blood flow through the arms was elevated preoperatively and decreased following operation. Blood flow through the legs increased postoperatively. The hypertension in the upper extremities and the hypotension in the lower extremities abated postoperatively. They concluded that there was no generalized elevation of the peripheral vascular resistance and that the hypertension was not caused by a renal pressor mechanism but to the resistance of the stenosis and the collateral circulation. Wakim et al (19) obtained similar results but thought that there was an increase in the peripheral resistance to maintain the high diastolic blood pressure distal to the site of coarctation.

After studying 31 patients, Hallenbeck et al (11) stated that equalization of pressures above and below the site of stricture is one but not the sole factor in determining the clinical result of surgical correction. Because of the apparently good clinical result occasionally associated with a poor laboratory result, clinical data alone cannot always be relied upon to establish the adequacy of the anastomosis. They conclude that neither the clinical status nor the laboratory measurements are static following operation and that for some reason both improve with time; that the criteria for laboratory cure as indicated by normal pressure contours and relationship of the femoral to the brachial blood pressure is not an absolute necessity of clinical cure; and that even when clinical results are good, heart size remains increased for at least one year postoperatively and there is no dramatic change in electrocardiograms.

Shick (20) reported one case in which there was an immediate drop in the brachial blood pressure, previously unobtainable femoral blood pressure was obtained, and femoral pulsations of good intensity were felt postoperatively.

In studying the intra-arterial blood pressures in 21 patients with coarctation by taking the blood pressure in the right radial artery and the right femoral artery using a hypodermic string-gauge manometer, Brown et al (21) found that the radial systolic pressure was always elevated with coarctation and that the radial diastolic

pressure was elevated above normal in all but one. In 13 of the 21 patients studied, the femoral systolic pressure was below normal but the femoral diastolic pressure was elevated above normal in all but two. In a study of nine postoperative patients, they found that there was a return to near normal in the pressure relationships.

In a later study of postoperative cases, Brown et al (22) found that the intra-arterial pressures in eight patients with aortic-aortic anastomoses, averaging 13.3 days after operation, were as follows: radial systolic pressure decreased (average 29 mm.), radial diastolic decreased (average 19 mm.); femoral systolic increased (average 20 mm.), and femoral diastolic decreased (average 5 mm.). They concluded that the ratio of femoral to radial systolic pressure was increased postoperatively toward normal; and that the femoral pulse wave became normal; and that more emphasis should be placed on pulse wave changes and their time of appearance rather than on blood pressures because the former is more objective with less subjective influence.

In experiments on dogs, there appears to be an equal incidence of thrombus formation in anastomoses made with an over-and-over whipping type stitch using 6-0 silk without eversion and with 6-0 silk using an everting type mattress suture. Intraluminal silk seemed to play a small role in thrombus formation at the suture line (23).

According to Warren and Linton, arterial thrombosis is more common than thrombophlebitis and "can never be ruled out until direct observation of the vessel is made" (24).

The case reported here would seem to follow the pattern of pressure relationships as described in the literature, i.e., decrease in brachial blood pressure, increase in femoral blood pressure, and appearance of good femoral pulsations of increasing intensity. It seems justifiable to assume thrombosis occurred at the anastomotic suture line when the brachial blood pressure increased concomitant with the disappearance of the femoral blood pressure and femoral pulsations. Unavoidable trauma which occurred at the time of anastomosis would strengthen this assumption.

Innerfield et al. (25) studied the effects of crystalline trypsin when given intravenously upon the protein components of the coagulation mechanism and the fibrin content of artificially induced intravascular thrombi in dogs and rabbits. They observed a lack of untoward reactions, including shock, when the rate and concentration of the injected trypsin were kept within carefully calculated limits. It was concluded that small doses of trypsin produce clots *in vitro* but that this effect of small trypsin dosage *in vivo* is apparently nullified by circulating anti-tryptic substances. Large doses of trypsin both *in vitro* and *in vivo* have powerful anticoagulant effects and intravenously administered trypsin induces lytic effects upon artificially formed intravascular thrombi in dogs and rabbits. They stated that the lytic effect of trypsin when given intravenously on the artificially produced thrombi was most impressive and included diminution, and in several instances, disappearance, of the thrombi *in situ* with restoration of the local circulation and vessel wall compressibility. The intravenous route effectively provided the surface contact between proteolytic enzymes and the fibrin meshwork in thrombi.

In a subsequent report, Innerfield et al (26) reported on 6456 trypsin infusions to 538 patients. They administered 100,000 units of trypsin diluted in 100 cc of normal saline at 30 drops per minute intravenously twice a day. They concluded that trypsin rapidly suppresses acute inflammatory processes of diversified origin (bacterial, viral, allergic, and chemical). They obtained the best results in patients with thrombophlebitis. They state that "It is important to note that decreased blood clot viscosity, fibrinolysis, and effective lysis of intravascular thrombi followed intravenous administration of trypsin."

Laufman et al (27) administered trypsin intravenously to 10 patients with acute thrombophlebitis, and to 20 patients with sequelae of chronic thrombophlebitis. They gave a total of 146 infusions with minimal side effects. The main effect these authors observed appeared to be an anti-inflammatory one with alleviation of pain, erythema, and tenderness. They were not able to produce lysis of any existing thrombi. Although they noted disappearance of superficial thrombi in patients with thrombophlebitis, this occurred no sooner than would be expected with conventional forms of therapy. In dog experiments they were able to show that trypsin has a profound effect on the circulating blood—mainly a diminution in the circulating clottable fibrinogen. They were unable to produce lysis of artificially produced thrombi in animals even with extremely large doses of trypsin unless some trypsin was infused prior to the production of the thrombi and then followed with more trypsin. These authors state that trypsin must be present in a thrombus (by virtue of having been in the circulation at the time of formation of the thrombus) in order for added trypsin to exert its thrombolytic effect.

SUMMARY AND CONCLUSIONS

A case is reported of a 7 year old white female with coarctation of the aorta of the adult type and an interatrial septal defect proved preoperatively by cardiac catheterization and angiocardiography, who underwent resection of the coarctation and end-to-end anastomosis of the aorta. The immediate postoperative result was good as manifested by a decrease in the brachial blood pressure, the appearance of femoral pulsations of good intensity, and the obtaining of the femoral blood pressure, all of which gradually assumed normal levels until the twelfth day after operation. At this time there was an increase in the brachial blood pressure concomitant with the disappearance of femoral pulsations and blood pressure. It was thought that a thrombus had formed at the operative site of anastomosis in the aorta causing partial to complete occlusion of the vessel. Symptoms and signs of cardiac decompensation did not occur because of the excellent collateral circulation which was present preoperatively and the relative slowness of the process of thrombus formation. Trypsin was administered intravenously for 7 days (total of 900,000 units) followed by dicoumarol. There was a decrease in the brachial blood pressure, the femoral pulsations returned, and femoral blood pressure was again obtained. The patient was discharged from the hospital and has continued to do well for 18 months following operation.

It is postulated that the enzymatic fibrinolytic and thrombolytic effect of the

intravenously administered trypsin may have resulted in dissolution of a thrombus at the operative site with a re-establishment of the aortic circulation in this patient.

(Dr. Sidney Scherlis was cardiac consultant; Dr. R. Adams Cowley performed the surgery on this patient.)

BIBLIOGRAPHY

- (1) CRAAFORD, C., AND NYLIN, G.: Congenital coarctation and its surgical treatment, *J. Thoracic Surgery* **14**: 347-361, 1945.
- (2) CARTER, B. N.: Surgery of the heart and allied great vessels, *J. A. M. A.* **138**: 1207-1212, 12-25-48, No. 17.
- (3) GROSS, R. E.: Surgical treatment for coarctation of the aorta, *J. A. M. A.* **139**: 285-292, 1-29-49, No. 5.
- (4) HUMPHREYS, G. H. III, DETERLING, R. A. JR.: Results of surgical therapy of congenital cardiovascular anomalies, *N. Y. State J. Med.* **50**: 1822-1829, 8-1-50.
- (5) CLAGGETT, O. T., AND JAMPOLIS, R. W.: Coarctation of the aorta: study of 70 cases in which surgical exploration was performed, *A. M. A. Arch. Surg.* **63**: 337-349, Sept., 1951.
- (6) GROSS, R. E.: Coarctation of the aorta: surgical treatment of 100 cases, *Circulation* **1**: 41, 1950.
- (7) BING, R. J., HANDELSMAN, J. C., CAMPBELL, J. A., GRISWOLD, H. E., AND BLALOCK, A.: Surgical treatment and physiopathology of coarctation of the aorta, *Ann. Surg.* **128**: 803-824, Oct., 1948.
- (8) JOHNSON, J., AND KIRBY, C. K.: Surgical treatment of infantile type of coarctation of the aorta, *Ann. Surg.* **127**: 1119-1127, June, 1948.
- (9) BLALOCK, A., AND PARK, E. A.: The surgical treatment of experimental coarctation (atresia) of the aorta, *Ann. Surg.* **119**: 445-456, March, 1944.
- (10) GROSS, R. E., HURWITT, E. S., BILL, A. H., JR., AND PIERCE, E. C. II: Preliminary observations on the use of human arterial grafts in the treatment of certain cardiovascular defects, *New England J. Med.* **239**: 578-579, 10-14-48.
- (11) HALLENBECK, G. A., WOOD, E. H., BURCHELL, H. B. AND CLAGGETT, O. T.: Coarctation of the aorta, *Surg., Gyn., & Obs.* **92**: 75-80, Jan., 1951.
- (12) DRY, T. B.: Present status of surgical treatment for cardiac diseases, *J. A. M. A.* **150**: 19-24, 9-6-52, No. 1.
- (13) BRADSHAW, H. H., O'NEILL, J. F., AND HIGHTOWER, F.: Resection of coarctation of the aorta with subclavian-aortic anastomosis, *J. Thor. Surg.* **17**: 210-222, Apr., 1948.
- (14) TOBIAS, J. W., PERETTA, A., PATARO, V. F., AND SALES, E. J.: Surgical therapy of adult and complete coarctation of the aorta followed by postoperative thrombosis, *An. Inst. Modelu* **27**: 426-467, 1947-49.
- (15) GROSS, R. E.: Technical considerations in surgical therapy for coarctation of the aorta, *Surg.* **20**: 1-8, 1946.
- (16) GROSS, R. E.: Surgical correction for coarctation of the aorta, *Surg.* **18**: 673-678, 1945.
- (17) STEPHENS, H. B., GRIMES, O. F.: Coarctation of the aorta, *J. Thor. Surg.* **18**: 804-826, No. 6, Dec., 1949.
- (18) BROWN, H. R., JR., HOFFMAN, M. J., AND DELALLA, V., JR.: Ballistocardiograms in coarctation of the aorta, *New England J. Med.* **240**: 715-718, No. 18, 5-5-49.
- (19) WAKIM, K. G., SLAUGHTER, O., AND CLAGGETT, O. T.: Studies on the blood flow in the extremities in cases of coarctation of the aorta: determination before and after excision of the coarctate region, *Proc. Staff Mayo Clinic*, **23**: 347-351, 7-21-48.
- (20) SHICK, R. M.: Surgical treatment of coarctation of the aorta—report of case, *Proc. Staff Mayo Clinic* **22**: 127-128.
- (21) BROWN, G. E., POLLACK, A. A., CLAGGETT, O. T., AND WOOD, E. H.: Intra-arterial blood pressure in patients with coarctation of the aorta, *Proc. Staff Mayo Clinic*, **23**: 129-134, No. 6, 3-17-48.

- (22) BROWN, G. E., CLAGGETT, O. T., BURCHELL, H. B., AND WOOD, E. H.: Preoperative and post-operative studies of intra-radial and intra-femoral pressures in patients with coarctation of the aorta, *Proc. Staff Mayo Clinic*, **23**: 352-358, 7-21-48.
- (23) SAKO, Y., CHISHOLM, T. C., MERINDINO, K. A., AND VARCO, R. L.: An experimental evaluation of certain methods of suturing the thoracic aorta, *Ann. Surg.* **130**: 363-383, No. 3, Sept., 1949.
- (24) WARREN, R., AND LINTON, R. R.: The treatment of arterial embolism, *New England J. Med.* **238**: 421-429, 1948.
- (25) INNERFIELD, I., SCHWARZ, A., AND ANGRIST, A.: Intravenous trypsin: Its anticoagulant fibrinolytic, and thrombolytic effects, *J. Clin. Invest.* **31**: 1049-1055, No. 12, Dec., 1952.
- (26) INNERFIELD, I., ANGRIST, A., AND SCHWARZ, A.: Parenteral administration of trypsin—clinical effect in 538 patients, *J. A. M. A.* **152**: 597-605, No. 7, 6-13-53.
- (27) LAUFMAN, H., AND ROACH, H. D.: Intravenous trypsin in treatment of thrombotic phenomena, *A. M. A. Arch. Surg.* **66**: 552-562, No. 4, April, 1953.

DEPARTMENT
OF
OBSTETRICS

UNIVERSITY OF MARYLAND
SCHOOL OF MEDICINE

*Summary of Admissions
and
Perinatal Mortality*

July 1, 1953 through June 30, 1954

I. SUMMARY

	White Ward	Negro	Private	Total
1. Number of patients discharged.....	370	1944	1753	4067
2. Number of patients delivered & discharged (twins 34 sets).....	340	1790	1202	3332
A. Patients delivered of viable infants.....	338	1778	1139	3255
B. Patients aborting.....	2	12	63	77
3. Maternal Mortality.....				
A. Rate per 1000 live births.....	5.94	0.57	1.76	1.55
4. Number of viable babies born.....	345	1791	1153	3289
a. Term.....	293	1518	1055	2866
b. Premature*.....	46	240	83	369
c. Immature†.....	6	33	15	54
A. Number born alive.....	337	1749	1133	3219
a. Term.....	293	1505	1050	2848
b. Premature.....	41	225	76	342
c. Immature.....	3	19	7	29
B. Number stillborn.....	8	42	20	70
a. Term.....	0	13	5	18
b. Premature.....	5	15	7	27
c. Immature.....	3	14	8	25
5. Number of neonatal deaths.....	13	46	14	73
a. Term.....	3	8	5	16
b. Premature.....	7	20	5	32
c. Immature.....	3	18	4	25
6. Total perinatal mortality.....	21	88	34	143
a. Rate per 1000 live births.....	62.4	50.3	30.0	44.4
7. Rate deducting immature deliveries.....	44.5	32.0	19.4	28.9

* A premature baby is one which weighs between 1000 grams and 2499 grams.

† An immature baby is one which weighs between 400 grams and 999 grams.

II. TOTAL DELIVERIES BY NUMBER OF PRENATAL EXAMINATIONS

Number of examinations	White Ward	Negro	Private	Total	Fetal Loss	
					No.	Per cent
0.....	96	176	2	274	33	12.0
1-3.....	22	80	18	120	14	11.6
4-7.....	62	298	123	483	33	6.8
8 or more.....	146	1195	975	2316	51	2.2
Elsewhere.....	15	20	18	53	3	5.7
Unknown.....	4	22	17	43	9	20.9
Total.....	345	1791	1153	3289	143	4.35

III. TOTAL DELIVERIES BY PRESENTATION

Presentation	White Ward	Negro	Private	Total	Fetal Loss	
					Number	Per cent
Vertex.....	320	1707	1104	3131	104	3.3
Breech.....	20	68	39	127	34	26.8
Face.....	0	6	5	11	1	9.1
Brow.....	0	0	1	1	0	0.0
Compound.....	0	2	0	2	1	50.0
Transverse.....	4	3	4	11	1	9.1
Unknown.....	1	5	0	6	2	33.3
Total.....	345	1791	1153	3289	143	4.35
Twins and other multiple births.....	14	26	28	68	13	19.1

IV. TOTAL OPERATIONS FOR DELIVERY

A. Forceps and Cesarean Section and Other Operations

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Low forceps, elective	192	55.7	920	51.3	828	71.8	1940	59.0	27	1.4
* Low forceps, indicated...	17	4.9	116	6.5	75	6.5	208	6.3	7	3.4
Mid forceps, elective	2	0.6	24	1.4	28	2.5	54	1.6	1	1.8
* Mid forceps, indicated...	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total Forceps	211	61.2	1060	59.2	931	80.8	2202	66.9	35	1.6
Cesarean Section	11	3.2	70†	3.9	42	3.6	123	3.74	8	6.5
Breech, spontaneous	6	1.7	12	0.7	5	0.4	23	0.7	15	65.2
Breech, extraction	13	3.8	46	2.6	26	2.3	85	2.6	18	21.2
Breech, decomposition	1	0.3	2	0.1	2	0.1	5	0.2	0	0.0
Breech, forceps after coming head	9	2.6	29	1.6	17	1.5	55	1.7	5	9.1
Total Breech	20	5.8	60	3.4	33	2.8	113	3.5	33	29.2
Craniotomy & other destructive operations	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Version & extraction (single)	0	0.0	0	0.0	2	0.1	2	0.1	0	0.0
Version & extraction (multiple)	1	0.3	1	0.1	1	0.1	3	0.1	0	0.0
Spontaneous	102	29.6	599	33.4	144	12.5	845	25.7	67	7.9

B. Episiotomy

	White Ward	Negro	Private	Total
Median	221	1130	950	2301
3° laceration	10	42	15	67
Per cent	4.5	3.7	1.6	2.9
4° laceration	9	47	20	76
Per cent	4.1	4.2	2.1	3.2
Mediolateral	0	3	13	16
3° laceration	0	0	0	0
Per cent	0.0	0.0	0.0	0.0
4° laceration	0	0	0	0
Per cent	0.0	0.0	0.0	0.0
Total	221	1133	963	2317

* Indicated forceps refer to delivery after 2 hours of second stage labor.

† 1 section delivery of twins.

IV.—Continued
C. Other Operations

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Hysterostomy.....	0	0.0	0	0.0	1	0.1	1	0.1	0	0.0
External version.....	0	0.0	1	0.1	7	0.6	8	0.2	1	12.5
Induction of labor by rupture of membranes.....	1	0.3	5	0.3	10	0.9	16	0.5	1	6.3
Pit. induction.....	5	1.4	29	1.6	45	3.9	79	2.4	4	5.1
Induction of labor—other.....	7	2.0	20	1.1	4	0.4	31	0.9	4	12.9
Pit. stimulation.....	2	0.6	16	0.9	19	1.6	37	1.1	3	8.1
Manual removal of placenta.....	5	1.4	26	1.4	30	2.6	61	1.8	—	—
Repair of cervical laceration.....	23	6.7	97	5.4	30	2.6	150	4.6	—	—
Repair of vaginal laceration.....	12	3.5	59	3.3	23	2.0	94	2.9	—	—
Prolapse of cord.....	2	0.6	18	1.0	5	0.4	25	0.8	14	56.0
Willet forceps.....	0	0.0	0	0.0	2	0.2	2	0.1	0	0.0
Single transfusion.....	15	4.3	110	6.2	44	3.8	169	5.1	—	—
Multiple transfusion.....	10	2.9	69	3.9	29	2.5	108	3.3	—	—
Shoulder dystocia.....	0	0.0	6	0.3	2	0.2	8	0.2	0	0.0

D. Vertex Rotations

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Occiput transverse.....	24	7.0	123	6.9	86	7.4	233	7.1	5	2.1
As such.....	2	0.6	3	0.2	1	0.1	6	0.2	1	16.7
Spon. rotation.....	9	2.6	68	3.8	23	2.0	100	3.0	1	1.0
Forceps rotation.....	8	2.3	38	2.1	38	3.3	84	2.6	2	2.4
Manual rotation.....	5	1.5	14	0.8	24	2.0	43	1.3	1	2.3
Occiput posterior.....	25	7.2	167	9.3	78	6.8	270	8.2	9	3.3
As such.....	9	2.6	67	3.7	15	1.3	91	2.7	7	7.7
Spon. rotation.....	8	2.3	26	1.4	8	0.7	42	1.3	0	0.0
Forceps rotation.....	6	1.7	52	2.9	37	3.2	95	2.9	1	1.1
Manual rotation.....	2	0.6	22	1.3	18	1.6	42	1.3	1	2.4

E. Total Number of Deliveries with Previous Cesarean Section

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Vaginal delivery.....	2	0.6	11	0.6	10	0.9	23	0.7	2	8.7
Repeat cesarean section.....	2	0.6	29	1.6	22	1.9	53	1.6	1	1.9
Total.....	4	1.2	40	2.2	32	2.8	76	2.3	3	4.0

V. TOTAL NUMBER OF LIVE BIRTHS ACCORDING TO WEIGHT AND CONDITION AT DISCHARGE

Birth Weight, Grams	White Ward			Negro			Private			Total		
	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths	Total Live Births	Died	% Deaths
400-999	3	3	100.0	19	18	94.6	7	4	57.2	29	25	86.2
1000-1499	2	0	0.0	25	9	36.0	8	2	25.0	35	11	31.4
1500-1999	9	2	22.2	53	8	15.1	16	1	6.3	78	11	14.1
2000-2499	30	5	16.7	147	3	2.0	52	2	3.9	229	10	4.4
2500 & over	293	3	1.0	1505	8	0.5	1050	5	0.5	2848	16	0.6
Total	337	13	3.9	1749	46	2.6	1133	14	1.2	3219	73	2.3

VI. TOTAL NUMBER OF STILLBIRTHS ACCORDING TO WEIGHT

Birth Weight, Grams,	White Ward			Negro			Private			Total		
	Total Births	Stillbirths	% Stillbirths	Total Births	Stillbirths	% Stillbirths	Total Births	Stillbirths	% Stillbirths	Total Births	Stillbirths	% Stillbirths
400-999	6	3	50.0	33	14	42.4	15	8	53.3	54	25	46.3
1000-1499	3	1	33.3	31	6	19.3	11	3	27.3	45	10	22.2
1500-1999	11	2	18.2	60	7	11.6	19	3	15.8	90	12	13.3
2000-2499	32	2	6.3	149	2	1.3	53	1	1.9	234	5	2.1
2500 & over	293	0	0.0	1518	13	0.9	1055	5	0.5	2866	18	0.6
Total	345	8	2.3	1791	42	2.3	1153	20	1.7	3289	70	2.1

VII. TOTAL NUMBER OF STILLBIRTHS AND NEONATAL DEATHS ACCORDING TO WEIGHT

Weight, grams	White Ward			Negro			Private			Total		
	Total Births	Stillbirths & Neonatal Deaths	%	Total Births	Stillbirths & Neonatal Deaths	%	Total Births	Stillbirths & Neonatal Deaths	%	Total Births	Stillbirths & Neonatal Deaths	%
400-999	6	6	100.0	33	32	97.0	15	12	80.0	54	50	92.6
1000-1499	3	1	33.3	31	15	48.4	11	5	44.4	45	21	46.7
1500-1999	11	4	36.4	60	15	25.0	19	4	21.0	90	23	25.6
2000-2499	32	7	21.8	149	5	3.4	53	3	5.7	234	15	6.4
2500 & over	293	3	1.0	1518	21	1.4	1055	10	0.9	2866	34	1.2
Total	345	21	6.1	1791	88	4.9	1153	34	2.9	3289	143	4.3

VIII. ETIOLOGY OF PERINATAL MORTALITY

	Premature			Full Term			Total
	W. W.	Negro	Private	W. W.	Negro	Private	
Hemorrhage intracranial.....	1	6	0	1	1	2	11
Precipitate labor.....	0	1	0	1	1	1	4
Breech.....	1	5	0	0	0	1	7
Anoxia.....	10	27	3	1	13	3	57
Placenta—premature separation of.....	5	11	2	0	5	2	25
Placenta previa.....	5	2	0	0	0	0	7
Toxemia.....	0	8	1	0	3	0	12
Cord—umbilical compression of.....	0	5	0	1	5	1	12
Complications—medical.....	0	1	0	0	0	0	1
Development—anomalies of.....	1	1	3	1	1	1	8
Infections.....	0	0	0	0	1	1	2
Pneumonia.....	0	0	0	0	0	0	0
Septicemia.....	0	0	0	0	1	1	2
Immaturity.....	6	18	12	0	0	0	36
Atelectasis.....	0	3	2	0	3	1	9
Erythroblastosis.....	0	1	1	0	0	2	4
Undetermined.....	0	11	3	0	2	0	16

IX. CAUSES OF PREMATURITY AND IMMATURITY

	White Ward	Negro	Private	Total	Fetal Loss	
					No.	Per cent
Toxemia.....	1	42	1	44	6	13.6
Hemorrhage.....	8	39	14	61	33	54.2
Premature rupture of membranes.....	9	62	25	96	12	12.5
Multiple pregnancy.....	9	17	18	44	12	27.3
Maternal diseases.....	2	2	0	4	2	50.0
Cervical pathology.....	3	5	0	8	0	0.0
Fetal abnormalities.....	2	6	5	13	2	15.4
Fetus-death-in-utero.....	2	14	8	24	24	100.0
Undetermined.....	16	86	27	129	18	14.0
Total.....	52	273	98	423	109	25.8

X. COMPLICATIONS

A. Total Number of Deliveries with Toxemia

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.
Acute toxemia	19	5.5	132	7.4	41	3.5	192	5.8	10	5.2
Pre-eclampsia	19	5.5	126	7.0	40	3.4	185	5.6	9	4.9
Eclampsia	0	0.0	6	0.4	1	0.1	7	0.2	1	14.3
Chronic hypertension	27	7.8	279	15.6	64	5.5	370	11.2	21	5.7
With toxemia	2	0.6	31	1.7	2	0.1	35	1.0	3	8.6
Without toxemia	25	7.2	248	13.9	62	5.4	335	10.2	18	5.4
Total	46	13.3	411	23.0	105	9.0	562	17.0	31	5.5

B. Total Number of Deliveries—RH Negative

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.
Rh Neg.—sensitized	5	1.5	9	0.5	20	1.7	34	1.0	8	23.5
Rh Neg.—not sensitized	35	10.1	96	5.3	167	14.5	298	9.1	8	2.7
Other isoimmunization	0	0.0	0	0.0	3	0.3	3	0.1	0	0.0
Total	40	11.6	105	5.8	190	16.5	335	10.2	16	4.8

C. Total Number of Deliveries with Medical Complications

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.
Heart disease	2	0.6	19	1.1	12	1.0	33	1.0	1	3.0
No failure	2	0.6	17	1.0	9	0.8	28	0.9	1	3.6
Failure	0	0.0	2	0.1	3	0.2	5	0.1	0	0.0
Tuberculosis	3	0.9	12	0.7	12	1.0	27	0.8	1	3.7
Pulmonary, active	0	0.0	1	0.1	0	0.0	1	0.1	0	0.0
Pulmonary, inactive	3	0.9	10	0.5	11	0.9	24	0.7	1	4.2
Elsewhere	0	0.0	1	0.1	1	0.1	2	0.1	0	0.0
Diabetes	3	0.9	12	0.7	5	0.4	20	0.6	2	10.0
Sickle cell anemia	—	—	2	0.1	—	—	2	0.1	2	100.0

D. Total Number of Deliveries with Syphilis

White Ward		Negro		Private		Total	
Number	% of Dels.	Number	% of Dels.	Number	% of Dels.	Number	% of Dels.
3	0.9	75	4.2	1	0.1	79	2.4

E. Prolonged Labor

	Number	% of Del.	Fetal Loss	
			No.	Per cent
Pitocin stimulation	8	0.2	0	0.0
Spontaneous delivery	7	0.2	1	14.3
Elective forceps	19	0.6	1	5.3
Indicated forceps	23	0.7	0	0.0
Cesarean section	7	0.2	0	0.0
Breech	3	0.1	1	33.3
Total	67	2.0	3	4.5

X. Continued
F. Total Number of Deliveries by Pelvis

Type of Pelvis	Cases			By Roentgen-ray			Fetal Loss (cases)		Fetal Loss (X-ray)	
	W. W.	Negro	Private	W. W.	Negro	Private	No.	%	No.	%
Normal	241	1376	1096	34	289	109	92	3.4	5	1.2
Contracted inlet	1	37	3	1	26	2	3	7.3	2	6.9
Midplane cont.	8	56	23	5	40	20	4	4.6	2	3.1
Outlet cont.	13	71	11	3	33	3	1	1.1	0	0.0
Inlet & outlet	2	8	0	1	5	0	0	0.0	0	0.0
Inlet & midplane	0	17	3	0	9	2	1	5.0	0	0.0
Mid. & outlet	4	76	9	3	56	5	3	3.4	2	3.1
Inlet, midplane & outlet	0	12	0	0	10	0	2	16.7	1	10.0
Asymmetrical	0	1	0	0	0	0	0	0.0	0	0.0
Unknown	76	137	8	2	3	0	37	16.7	2	40.0
Total	345	1791	1153	49	471	141	143	4.35	14	2.1

G. Total Number of Deliveries with Hemorrhage

	White Ward		Negro		Private		Total		Fetal Loss	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.	No.	%
Antepartum Hemorrhage										
Placenta previa	4	1.2	12	0.7	14	1.2	30	0.9	7	23.4
Abruptio placenta	8	2.3	35	1.9	19	1.6	62	1.9	27	43.5
Marginal sinus	0	0.0	2	0.1	2	0.2	4	0.1	1	25.0
Ruptured uterus	0	0.0	0	0.0	1	0.1	1	0.1	0	0.0
Other causes	5	1.4	28	1.7	15	1.3	48	1.5	13	27.0
Total A. P. hemorrhage	17	4.9	77	4.3	51	4.4	145	4.4	48	33.0
No A. P. hemorrhage	328	95.1	1714	95.7	1102	95.6	3144	95.6	95	3.0
Total deliveries	345	100.0	1791	100.0	1153	100.0	3289	100.0	143	4.3

*Postpartum Hemorrhage

Total P. P. hemorrhage	28	8.1	97	5.4	38	3.3	163	4.9		
No P. P. hemorrhage	317	91.9	1694	94.6	1115	96.7	3126	95.1		
Total deliveries	345	100.0	1791	100.0	1153	100.0	3289	100.0		

* Postpartum hemorrhage is defined as blood loss of 500 cc. or more.

H. Total Number of Deliveries According to Puerperal Morbidity

Puerperal Morbidity	White Ward		Negro		Private		Total	
	No.	% Del.	No.	% Del.	No.	% Del.	No.	% Del.
One day fever	15	4.3	76	4.2	30	2.6	121	3.7
Puerperal infection	16	4.6	114	6.4	20	1.7	150	4.6
Febrile, other causes	4	1.1	57	3.2	15	1.3	76	2.3
Afebrile	310	90.0	1544	86.2	1088	94.4	2942	89.4
Total	345	100.0	1791	100.0	1153	100.0	3289	100.0

XI. CESAREAN SECTIONS

Type of operation	White Ward	Negro	Private	Total	Fetal Loss	
					No.	%
Low cervical	7	53	32	92	4	4.3
Classical	0	2	6	8	1	12.5
Classical with tubal sterilization	2	1	1	4	1	25.0
Low cervical with tubal sterilization	2	7	4	13	1	7.7
Classical and hysterectomy	0	2	0	2	1	50.0
Extraperitoneal	0	5	0	5	0	0.0
Total	11	70	43	124	8	6.5

Indications for Cesarean Section

1. Pelvic contractions and mechanical dystocia	5	33	4	42	1	2.4
A. Contracted pelvis	2	21	1	24	0	0.0
B. Uterine inertia	0	11	2	13	0	0.0
C. Malpresentation	3	1	0	4	1	25.0
D. Large fetus—normal pelvis	0	0	1	1	0	0.0
2. Previous cesarean section	2	21	18	41	0	0.0
3. Hemorrhagic complications	2	7	12	21	6	28.6
A. Abruptio placentae	1	2	3	6	3	50.0
B. Placenta previa	1	5	9	15	3	20.0
C. Ruptured uterus	0	0	0	0	0	0.0
4. Toxemia	0	4	4	8	0	0.0
5. Diabetes	1	3	0	4	0	0.0
6. Miscellaneous	1	2	4	7	1	14.3
A. Elderly primigravida	0	0	0	0	0	0.0
B. Prolapse of cord	0	1	1	2	0	0.0
C. Bad obstetric history	0	1	1	2	0	0.0
D. Other	1	0	2	3	1	33.3

XII. THERAPEUTIC ABORTIONS

White Ward	Negro	Private	Total
0	0	0	0

XIII. STERILIZATIONS

	White Ward	Negro	Private	Total
Type of operation				
A. Tubal, puerperium.....	6	23	4	33
B. Tubal, not pregnant.....	0	0	0	0
C. Accompanying cesarean sect.—tubal ligation.....	4	8	5	17
D. Accompanying therapeutic abortion—hysterotomy & tubal ligation.....	0	0	0	0
E. Accompanying cesarean sect.—hysterectomy..	0	0	0	0
F. Hysterectomy, not pregnant.....	1	8	0	9
Total.....	11	39	9	59

Indications for Sterilization

Diabetes.....	0	0	0	0
Previous section.....	4	8	5	17
Hypertensive disease.....	0	1	0	1
Multiparity.....	7	28	1	36
Heart disease.....	0	0	0	0
Other.....	0	2	3	5
Total.....	11	39	9	59

XIV. MATERNAL DEATHS

Total live births.....	3219
Total maternal deaths.....	5
Total maternal death rate.....	1.55 per 1000 live births
Registered births.....	2972
Maternal deaths in registered patients.....	3
Maternal death rate in registered patients.....	1.0 per 1000 reg. births
Non-registered births.....	317
Maternal death in non-registered patients.....	2
Maternal death rate in non-registered patients.....	6.32 per 1000 unreg. patients

M. B., #018-9-20. This patient is a 32 year old, white, private patient, para 2-0-0-2, admitted July 10, 1953 in early labor. In May, 1950 she had a mitral commissurotomy operation for disabling mitral stenosis following which her cardiac status was markedly improved. The patient had a previous admission on June 30, 1953 during this pregnancy for elective evaluation and was in fine condition. Labor progressed normally. There were a few moist rales in both lung bases and faint suggestion of nail-bed cyanosis. At full dilatation the patient was given pudendal block. During this she was inadvertently given 0.5 cc. of pitocin intravenously, which was followed by severe abdominal pain. Forceps were applied, and the baby quickly delivered in good condition. The mother immediately went into severe failure and 12½ hours after delivery death ensued, the failure never improving under adequate medical therapy. An autopsy was not obtained. Diagnosis: *Rheumatic heart disease with congestive failure; previous mitral commissurotomy.*

A. T. #019-4-57. This patient is an 18 year old, white, registered patient, para 1-0-0-1 admitted September 14, 1953 in premature labor who was delivered of a premature living male weighing 2126

grams without difficulty. On her fourth postpartum day there was a temperature elevation to 101.2 F with some nausea and vomiting. The patient was discharged the next day afebrile. She was readmitted on September 22, 1953 with a temperature of 100.4 F, pulse 130 with vomiting, abdominal pain and tenderness. Conservative treatment with antibiotics and supportive therapy was administered. Her temperature was spiked to 103 F. The patient's condition gave the impression of pelvic cellulitis and mechanical obstruction. Surgical consultation did not advise operative procedure. On September 26 700 cc. of fluid was removed by abdominal paracentesis. This was followed by abdominal drainage through two McBurney incisions. All subsequent therapy was to no avail and she died September 29, 1953. *Autopsy: Fibrous adhesions, cecum; internal hernia; infarction, ileum, with perforations; generalized peritonitis, subdiaphragmatic abscess; fistula, sigmoid.*

A. G. #026-2-83. A 38 year old, white, unregistered patient, para 2-0-0-2, was admitted November 20, 1953 after spontaneous delivery of a premature dead female child in a taxicab on the way to the hospital. This patient had a melanoma of the back. She died on November 24, 1953. *Autopsy: Melanoma of skin with metastases.*

A. K. #052-5-11. This 28 year old, white, private patient, para 1-0-0-1, was admitted in advanced labor on March 17, 1954. Soon after admission she spontaneously delivered a premature living female weighing 1431 grams. The prenatal course was uneventful. Admission blood pressure was 160 systolic/100 diastolic. Blood pressure immediately after delivery was 210 systolic/120 diastolic. She was treated conservatively with morphine and phenobarbital. Her blood pressure dropped to 160 systolic/110 diastolic. Three hours after delivery the patient's blood pressure was 206 systolic/100 diastolic. A heavier sedation was given and during therapy she had a generalized convulsion. She was treated vigorously and 7½ hours after delivery had a second convulsion followed by a third at 8 hours. In spite of heavy sedation, 14 hours after delivery a fourth convulsion occurred and 15½ hours after delivery the patient's respirations ceased. *Autopsy: Pulmonary edema and congestion; extensive ecchymoses of liver and petechial hemorrhage of brain. Diagnosis: Eclampsia.*

M. L. #020-2-64. This patient, a 32 year old, colored, unregistered, para 5-0-5-5, was admitted May 1, 1954 after having delivered a premature dead female at home unattended. Having lost a large amount of blood at home, she showed severe shock on admission. After 1000 cc. of whole blood and 500 cc. Dextran® the state of shock was unimproved. Catheterized urine was grossly bloody. The intrauterine cavity was explored with no evidence of rupture. The uterus continued to relax with hemorrhage continuing. A hysterectomy was advised and performed. At completion of this operation the patient's blood pressure was 190 systolic/100 diastolic. She had received 4500 cc. of whole blood. There was no evidence of abnormal clotting mechanism. About 4 hours after the hysterectomy the patient expired. *Autopsy: Couvelaire uterus, petechial hemorrhage of kidney, liver, heart, and brain. Cause of death: Abruptio placenta, postpartum hemorrhage, uterine atony.*

OBSTETRICAL CASE REPORT*

E. M., a 29 year old white female, para 4-0-0-1. Whose blood type was A and who was Rh negative.

Her past obstetrical history was as follows: In 1946 she gave birth to a full term living male child, Rh positive, the child now living. In 1948 a full term living female child, Rh positive, *died* of erythroblastosis. There was no transfusion. In 1950 a full term living male child, Rh positive, also *died* of erythroblastosis after exchange transfusion. In 1952 a full term living male child, Rh positive, was *stillborn* at 38 weeks gestation of erythroblastosis and a neck tumor, the nature of which was not determined.

The patient was pregnant for the 5th time. Her present pregnancy was progressing normally but blood studies indicated a severe Rh incompatibility. Her expected date of confinement was October 28, 1954. Her husband was heterozygous.

Samples of Rh studies were as follows:

<i>Rh antibodies</i>	(10-19-51, non-preg.)	(4-11-54, 16 weeks)	(8-12-54, 32 weeks)	(9-26-54, 37 weeks)	(10-4-54, 38 weeks)
<i>Alb. agglut.</i>	384	12,288	16,384	24,476	16,384
<i>Serum Agglut.</i>	8	192	128	192	128
<i>Saline Agglut.</i>	neg.	neg.	neg.	neg.	neg.
<i>Blocking test</i>	neg.	neg.	neg.	neg.	neg.

Treatment

At approximately 38 weeks the patient was admitted to the hospital on October 9, 1954. The estimated size of the fetus was 2800 grams. A flat plate roentgenogram of the abdomen showed a normal fetal outline. Membranes were stripped (not ruptured) on 2 occasions and on October 11, 1954 the fetal vertex was engaged in the pelvis and the cervix 3 centimeters dilated. Labor began spontaneously on October 11, 1954 and a full term living female child weighing 3062 grams was delivered without difficulty.

The baby was Rh positive. Blood studies showed 80 nucleated erythrocytes per 100 leucocytes. Hemoglobin 77 per cent. In one hour the baby was jaundiced; hemoglobin was 64 per cent and the bilirubin was elevated. An immediate exchange transfusion of 550 cc. of "O"-Rh negative blood was given by umbilical catheter. The baby did well. Three small transfusions were given in the next 5 days. The baby was discharged on the 10th day in good condition.

Discussion

This case illustrates the unpredictability of the Rh incompatibility problem. Three previous babies died and the outlook for this one was certainly poor, yet it survived.

The Rh case that shows antibodies should be followed meticulously. Rh studies must be done on the patient, her husband and surviving offspring. Her past Rh per-

* From the Department of Obstetrics, University of Maryland School of Medicine, Baltimore.

formance must be evaluated and consultation between the hematologist and obstetrician must be carried on repeatedly during the pregnancy. The pediatrician must be aware of the case and its problem before the patient is delivered. Studies on the baby should be done immediately at birth and transfusion done immediately if indicated. An experienced team of operators should perform this procedure, therefore the patient should be delivered where such service is available. The baby should be followed by blood counts for at least one year.

Discussion of Treatment

Rh studies on the husband and previous children are performed to determine if the husband is heterozygous or homozygous. If he is heterozygous an Rh negative offspring is possible. Such a baby would be normal and unaffected by Rh incompatibility. Anti-Rh titre (per se) cannot be used as a barometer for prognosis except in a general way. The question of early delivery is debatable. On the one hand, early delivery may save the baby from further intrauterine damage, but on the other hand it may add prematurity as an additional risk. Delivery from below is preferable but in some selected cases the woman may be delivered abdominally if the past obstetrical history warrants it. Since there is no known substance that will reduce Rh incompatibility, the next best step is to treat the affected baby. This is done by immediate and repeated blood studies. A decreasing hemoglobin and a rising bilirubin are indications for immediate transfusion. Exchange transfusion is difficult at times and therefore experience is needed in order to perform it. A special team trained in the method is often necessary in order to maintain a good surgical technique. At present one cannot be too dogmatic about the Rh case, the prognosis, method of management and the question of future pregnancies. All is subject to a difference of opinion but opinions do not vary greatly when the above-mentioned fundamentals are considered.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

Complaining of vomiting, weight loss, dysuria and frequency, this sixty year old white woman was admitted to the University Hospital. A daughter-in-law informed the admitting physician that the patient had been unwell for two weeks. The patient had been constipated for three weeks and had vomited every day for two weeks. One week before coming to this hospital she was given Penicillin for fever of 104 F. Inasmuch as lethargy appeared and increased, the patient was brought to the hospital.

Many years ago the patient had a hysterectomy and gallbladder operation. Whether the gallbladder was drained or removed was not known by the patient. One year before the present sickness, the patient was treated at the Mercy Hospital for diabetes and pain in the right upper abdominal quadrant. Pyelograms, roentgenographic examination of the upper alimentary canal and a barium enema were performed without significant disclosures. A cholecystogram was done, but no dye appeared in the gallbladder. A presumptive diagnosis of chronic cholecystitis was rendered, but because of diabetes mellitus and Parkinsonism, operative therapy was not attempted.

In the laboratory, this patient's blood sugar level was found to be 275 mgm.; urea nitrogen, 65 mgm. per cent; and carbon dioxide combining power, 63 volumes per cent. Her urine contained innumerable leucocytes, acetone, *E. coli* and sugar. The white blood cell count was 14,000 per cubic millimeter of blood. The blood cultures were sterile. There was no blood in the stools. The serum amylase, bilirubin, sodium chlorides and potassium were found to be normal. The serum albumin and globulin were determined to be 2.6 and 2.7 grams per hundred cubic centimeters respectively.

The patient was well developed but poorly nourished and dehydrated. She was lethargic and apparently not distressed. The right pupil was unresponsive to light and smaller than the left. The lenses were cloudy. The heart and lungs were judged by physical examination to be normal. In the upper right quadrant of the abdomen, a 10 centimeter mass was found which seemed to pulsate. This mass did not move with deep respiratory effort. There were no palpable lesions in the pelvis.

It was difficult to control the diabetes in this patient, but this difficulty lessened after treatment of the urinary tract infection with Terramycin and Gantrisin. Transfusions of blood were given to correct a secondary anemia. In three weeks the hemoglobin concentration had fallen from 13.2 grams to 7.3 grams per cent.

After 40 days in the hospital, the patient was discharged with the recommendation that she take 15 units of protamine zinc insulin per day and 2 milligrams Artane every six hours. One week later, the patient developed dark urine, light stools, and yellow discoloration of the skin and sclerae. She had several delirious periods that ranged from one-half to one hour in duration. Glycosuria and acetonuria had not returned. The abdomen had increased in size and hyperemesis had occurred. The abdominal mass had enlarged. Chemical analysis of the blood discovered azotemia, moderate

hyponatremia; hyperbilirubinemia, increased alkaline phosphatase, normal amylase, hypochromic anemia, and thymol turbidity of twelve. Albuminuria and pyuria were present. The albumin-globulin ratio was inverted.

Being alarmingly ill, the patient was given supportive therapy which failed to retard the disease process. On the afternoon following admission she vomited a large volume of blood and died.

Clinical Discussion

Dr. M. C. Pincoffs: As we review this case, we find that some years ago the patient had a gallbladder operation. That seems to be the first illness that bears on the present condition. For some time she had had diabetes and Parkinsonism. One year ago she was admitted to the Mercy Hospital because of uncontrolled diabetes, and pain in the right upper abdominal quadrant. Her physician then probably believed that she still had her gallbladder and would have operated on her if her general condition had been better.

The role of Parkinsonism in this patient is conjectural. The disease Parkinson described usually begins in the forties and as a rule advances very slowly. It produces no mental symptoms and is gradually incapacitating. In the type of Parkinsonism that follows certain forms of encephalitis the patient is generally spastic and tremorous. The third type, which is not true Parkinsonism, comes on in older people presumably as a result of arteriosclerotic changes in the cerebral vessels. Rigidity and gradually progressive mental changes occur. This type often ends fatally within a few years. Since it is not mentioned when the Parkinsonism began in this patient, I assume that it belongs to this third group.

There are two engaging things mentioned in the physical examination, one, that the mass was of considerable size and two, that it did not move with deep inspiration. Masses attached to the liver, gallbladder, to the transverse colon and even to the kidney tend to move downward with deep breathing, but deeper masses near the midline arise from structures that are fixed and not influenced by movement of the diaphragm. The pulsation of the mass must be carefully interpreted so that innate pulsation is not confused with pulsation imparted by a contiguous artery. If one can identify lateral throbbing of an abdominal mass, one can accept the probability of the mass being vascular.

Pulsation that moves antero-posteriorly is less significant because anything attached to or overlying the aorta may transmit its pulsations forward. The A/G ratio, on admission, may be significant. Such a finding is found in liver damage.

Dr. J. M. Dennis: This flat plate of the abdomen (Fig. 1) was taken on April 25. There is nothing significant about this abdomen. I cannot even see the mass which they describe, in it. There was a speculation at that time as to whether or not the transverse colon was depressed. These folds are probably caused by a weight loss. The chest roentgenograph was done on April 29. There were no abnormalities in the film. The barium enema did not reveal anything significant.

Dr. Pincoffs: In upper abdominal lesions the relation of the mass to the transverse colon is often helpful. Anterior protrusion and colic displacement may be helpful in deducing the nature and source of the mass.

Dr. Dennis: In the post evacuation film, there is no evidence of displacement of the colon or separation between the transverse colon and the stomach.

Dr. Pincoffs: There is one thing that might be significant in a negative way. I do not see evidence of calcification or enlarged vessels in that film. A pulsating mass in the upper abdomen suggests aortic aneurysmal dilatation or false aneurysm, but there is no excess calcification in this film.

Dr. Dennis: This (Fig. 2) is one film in an upper gastrointestinal study but unfortunately is not altogether satisfactory.

FIG. 1



FIG. 2



FIG. 3



FIG. 4

Dr. Pincoffs: The stomach is certainly shifted to the left. I wonder whether the duodenum which is only partially outlined here has a normal course. It seems to come across a good way. You might lay stress on that.

Dr. Dennis: I would not stress this film. I had the opportunity to repeat the examination a few days later and at that time I thought she definitely had a mass in the epigastrium pushing the stomach upward.

Dr. Pincoffs: I think you all see abnormal contour there, almost as if the stomach were cut off and narrowed. It does suggest a density of some kind.

Dr. Dennis: I suspect that this is where the mass is pressing on the stomach to produce a double contour. I think the mass is probably of the body of the pancreas. The I.V. pyelogram was not revealing. The pelves were normal in outline and position.

Dr. Pincoffs: That both kidneys excrete the dye in the usual time suggests that the elevated urea nitrogen may be on a pre-renal basis and not on renal failure.

Dr. Dennis: I have films of the second admission. This abdominal film (Fig. 3) helps us more than previous ones. We see the mass for the first time. This is a lateral roentgenograph of the abdomen (Fig. 4). It shows the calcification in the abdominal aorta.

Dr. Pincoffs: Would you say that the aorta is bowed forward further from the vertebrae than ordinarily?

Dr. Dennis: I should say that it is. I think that the vertebrae are eroded along their anterior margins.

Dr. Pincoffs: The data contributed by the last roentgenologic examination when added to the previous observations surely lead one to the diagnosis of aneurysm of the abdominal aorta. The pain and discharge of blood that preceded the sudden death of this patient indicates to me rupture of the lesion into the alimentary canal. Supported by previous experience and statistics, I should assume the aneurysm to be of a dissecting type. One should not stop here in his summation of this patient's status but attempt to interrelate, if possible, the diabetes, cholecystitis and jaundice.

Although atherosclerosis, cholecystitis and diabetes may be drawn from a common metabolic stem, such a conjecture is not essential to an adequate diagnostic expose of this case. The association of diabetes and gallstones with carcinoma of the pancreas diverts one to the possible diagnosis of pancreatic neoplasm and pseudocyst formation. If this were the case the jaundiced state of this patient would be the result of an obstruction. The short term of icterus discourages this mechanistic explanation of the jaundice. Hepatic necrosis, caused either by homologous serum or epidemic hepatitis, is more appealing.

My impression is that this woman had a dissecting aneurysm that ruptured into the gastrointestinal canal and chronic liver damage that ended with acute liver necrosis.

Pathologic Discussion

Dr. Hugh R. Spencer: This patient was a known diabetic. She had a mass in the upper right quadrant of her abdomen. This lesion was probably forming at the time of her admission to the Mercy Hospital. On her final admission to this hospital she

was jaundiced, and she died suddenly following the vomiting of a large quantity of bright red blood. At autopsy there were a number of interesting findings. The pancreas was quite firm and on section interstitial fibrosis with lymphocytic infiltration was noted. The islets were not very numerous but those seen showed no significant abnormality. There was generalized atherosclerosis involving especially the aorta and coronaries. While the heart was not significantly enlarged, the wall of the left ventricle was thickened (1.5 gm.) and the cusps of the aortic valve showed thickening with some calcification. There was moderate generalized arteriolar sclerosis in the kidneys and other organs. While in the hospital, attempts were made to visualize the gallbladder. Since the gallbladder had been removed at a previous operation, these were, of course, unsuccessful.

The abdominal mass about which there was considerable clinical interest was found to be behind the peritoneum on the right. The mass extended from the diaphragm to the iliac vessels. The mass was found to be a large retroperitoneal hematoma in which there was evidence of old and recent bleeding. The right kidney and right adrenal were found to lie within the hematoma. The source of the bleeding was a large atherosclerotic aneurysm of the abdominal aorta. It extended from a point just below the origin of the superior mesenteric artery to a point just distal to the origin of the renal arteries. The right renal artery contained a recent thrombus, and the right kidney was almost wholly infarcted. The hematoma had ruptured through the posterior wall of the second part of the duodenum. The duodenum, jejunum and upper portion of the ileum and stomach contained fresh blood.

Aneurysms of this type commonly rupture posteriorly beneath the peritoneum, producing massive hemorrhage. Close to ninety per cent of all abdominal aneurysms are of the arteriosclerotic variety. Such lesions are secondary as a rule to severe senile atheromatosis. The soft atheromatous material becomes washed out, producing ulcers. The blood, in time, dissects the wall, further weakening it, and produces dilatation and aneurysm. Since no evidence of biliary obstruction was found, it seems logical to assume that the jaundice developed on the basis of retroperitoneal hemorrhage.

Anatomic Diagnosis

Generalized arteriosclerosis; aneurysm, arteriosclerotic, abdominal aorta; erosion of bodies of second and third lumbar vertebrae; old and recent ruptures of aneurysm into retroperitoneal space, right; massive retroperitoneal hematoma, with rupture into second part of duodenum; icterus; thrombosis, recent, right renal artery; massive infarction, right kidney; absence of gallbladder; absence of uterus, tubes and ovaries.

BOOK REVIEW

Conduction Anesthesia. By George P. Pitkin, M.D. Edited by James L. Southworth, Robert A. Hingson and Winifred M. Pitkin. Second edition; Copyright 1953, J. B. Lippincott Company; 965 pages, 585 illustrations. Price \$22.50.

This book represents a much needed revision of the old Pitkin's "Conduction Anesthesia". The present edition is much more cohesive and the illustrations have been rearranged so as to correspond to the description in the text. The chapter on the anatomy of the vertebral canal has been rewritten and the section on pharmacology of local anesthetic drugs has been brought up to date. A new chapter discussing the complications of conduction anesthesia has been added and new illustration material has been inserted.

The book is grossly divisible into three major sections: 1) anatomical considerations, 2) pharmacology of local anesthetic drugs and instruments necessary for conduction anesthesia and 3) a detailed discussion of the techniques of nerve blocking. The first section is devoted to an anatomical survey of the entire nervous system, including the cranial nerves, the spinal nerves and a consideration of the visceral nerves and the autonomic nervous system. This section is a detailed survey of the entire nervous system with numerous illustrative plates.

The section dealing with the autonomic nervous system and visceral innervation is an excellent compilation of the facts which are usually strewn throughout numerous papers, and for each organ or organ system in the body there is a discussion of the segmental innervation of the viscera, the origin of the autonomic nerves, the visceral pathways, the relationships to the somatic dermatomes involved and a correlation of areas of referred pain to the body surface. All practitioners will find that this section alone is worthwhile reading.

The second section of the book is concerned with the discussion of the pharmacology of local anesthetic drugs with a section on the current theories of local anesthetic action on the nervous tissues. A presentation of equipment to be used in conduction anesthesia ends this section.

The final section of the book is concerned with specific block technique. Several techniques for blocking specific regions of the body are presented, with dosages, needle placement, etc., being thoroughly discussed. An important factor is the discussion of the limits of anesthesia obtained with each nerve block. Each chapter in this section is then completed by discussing the clinical application of each regional block in specific operative instances. The final chapter in the book discusses the various complications which may arise in the clinical application of conduction anesthesia and is also recommended reading for all practitioners of medicine.

This book has been written on the basic and sound premise that a properly conducted conduction anesthetic is by far the safest form of anesthesia for any type of surgery. This premise is not just an academic one as the authors in their daily practice utilize the techniques and principles described in this book. On reading the book one sees that the only limitation to the more general use of conduction anesthesia is the limitation of the operator himself. Conduction anesthesia will only work successfully if necessary time and study of anatomical land-marks is undertaken and is practiced until experience makes the blocks uniformly successful.

This book is essentially a reference book and will undoubtedly be used by most practitioners as such. In the light of this there may be some justified criticism of the inclusion by one of the authors of numerous anecdotes and personal reminiscences. To the person interested in conduction anesthesia in its entirety, these anecdotes and reminiscences, missing from many reference books, add a certain spice. The style of writing is leisurely and sometimes in description of technique is not always clear. In further editions it would be desirable if the book were made more compact and even better correlation between illustration and text were made.

Paul Hackett, M.D.

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To:

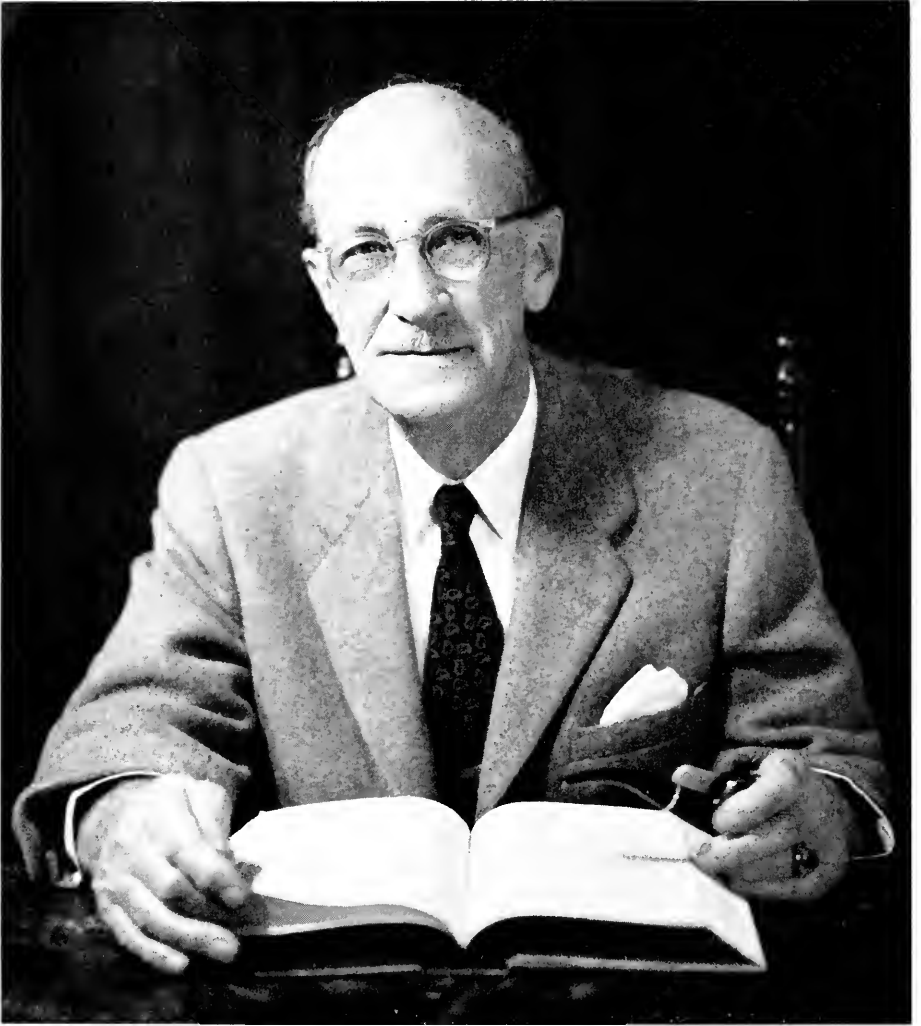
LOUIS H. DOUGLASS,

Professor, friend, scientist, educator

honored preceptor;—

this volume is respectfully dedicated by his
former students, associates and friends.

A LIVING TESTIMONIAL
OF ACHIEVEMENT and RESPECT.



LOUIS HARRIMAN DOUGLASS, M.D.
Professor of Obstetrics, University of Maryland

“There all the Learn’d shall at the labour stand,
And *Douglass* lend his soft, obstetric hand.”

—Alexander Pope.

EDITORIAL

THE PASSING OF THE PACK

Times change and medicine moves ahead. And as advances occur it is inevitable that drugs, operations and procedures which at one time were accepted as being highly efficacious should be found wanting and should be discarded. Their number is legion and extends from the nauseating concoctions of early medicine to those abandoned or replaced in recent years.

Among the latter group the use of the intrauterine pack for the control of postpartum hemorrhage should now be included. This was a method much in use until 10 or 15 years ago simply because there was no better way known to combat the condition.

Today the situation is quite different. No longer do we have to depend upon the uncertain fluid extract of ergot, which constantly varied in its oxytocic property, and could only be given by mouth. In its place we have the active oxytocic principle of ergot, ergonovine, and the oxytocic factor of the posterior pituitary gland. Both of these are consistent, powerful stimuli of the uterus and may be given by several routes, including the intravenous. The action of these two drugs upon the uterus is so constant that we can almost say that they "never" fail to cause uterine contraction. The exact nature of this statement should be noted: "they 'never' fail to cause uterine contraction." This does not mean that they will always control postpartum hemorrhage. If the cause of the bleeding is uterine relaxation or atony, the drugs should be sufficient and no further treatment needed. However, a certain number are caused by lacerations of the birth canal and here oxytocics will do little good. This will be discussed in more detail later.

Let us for the moment consider the intrauterine pack. Its advocates tell us that it serves a double purpose: (1) It makes pressure upon bleeding points and (2) It irritates the uterus and makes it contract. In order that it may accomplish these two functions we have been taught that both uterus and vagina must be very tightly packed. Viewing these two uses of the pack it would seem that they are both fallacious. If the pack is inserted into a flaccid, atonic uterus it will make firm pressure for a few minutes only, for the slightest increase in relaxation means that pressure is released and hemorrhage is no longer controlled. Again the uterus is packed to stimulate it to contract. So we fill it so full of gauze that a firm contraction is impossible! Another and powerful argument against the pack is the fact that it is dangerous. There is the ever present risk of infection which cannot be minimized even in this era of antibiotic therapy. There is the more immediate danger of concealing the bleeding while the pack is slowly absorbing blood until the saturation point is reached and it again becomes apparent. So a false sense of security may result and much valuable time lost, thinking that the hemorrhage is controlled.

The above may be looked upon as theories, but what are the facts about the use of the intrauterine pack? In a two year period in Maryland there were 95 maternal deaths. Of these 10 or 10.5 per cent resulted from post-partum hemorrhage. In all 10 an intrauterine pack had been used and had failed. Granted that these represent

only a portion of the cases in which the uterus was packed, a method of treatment which results in death 10 times in 2 years is far from being ideal. This is especially true if there are other methods which produce better results. In a similar number of deliveries in 3 of the large obstetric clinics in Baltimore where the pack is practically never used the mortality from postpartum hemorrhage was nil.

Very briefly the routine in these clinics is first to be sure that the bleeding is not from a visible laceration. If it is, the tear is repaired and the active treatment ends. If there is no visible laceration and the blood is coming from the uterus, it is first explored by hand to assure ourselves that there are no parts of the placenta remaining or that there is no rupture. The organ is then massaged gently, never vigorously, and bimanual compression used. At the same time the patient is given ergonovine or pitocin or both by vein. If this fails it is considered that the diagnosis of uterine atony was wrong and that there has occurred a rent in the uterine musculature. This rent need not extend through the uterine wall (a complete tear), it need only to invade the musculature and tear into one of the large sinuses in order to cause severe and, if not properly treated, fatal hemorrhage. Also it should be remembered that these incomplete tears often defy detection by manual exploration, even by the most skillful. The diagnosis may be made by exclusion.

Once the diagnosis is established the treatment is hysterectomy, done with the least possible delay. It is recognized that we all have an inherent respect for the uterus since it was from this organ that we all emerged into this world. But the uterus which is lacerated and bleeding deserves and should receive no respect from us. The proper place for it is the specimen basin.

Of the 10 deaths mentioned earlier, 9 were proved to have had a rupture of the uterus and in the 10th the diagnosis was strongly suspected but not proved since no autopsy was performed. If the treatment outlined above had been carried out promptly and properly, it is highly probable that these mothers would be with their families today. But—the uterus was packed!

Louis H. Douglass, M.D.

(During the preparation of this volume the possibility of having Dr. Douglass write an editorial for his "own" number presented itself to the staff. As customary, he cooperated beautifully, and with a most appropriate subject.—Ed.)

TOTAL HYSTERECTOMY AT TIME OF CESAREAN SECTION AND IN THE PUERPERIUM*

ISADORE A. SIEGEL, A.B., M.D., F.A.C.S.†

Total hysterectomy performed on the pregnant or puerperal woman is looked upon by many obstetricians and gynecologists as a radical and formidable procedure. These surgeons feel that the risk of increased maternal mortality and morbidity is such that only the diseased uterus should be removed at this time. In their opinion, some form of tubal ligation is the procedure of choice when sterilization only is indicated.

In the light of our improved surgical technique with the advantages of readily available blood and effective chemotherapy to combat hemorrhage and infection, I feel by and large this apprehension is mostly unjustified. The experience of Davis (4), and Dyer (7), et al seem to bear this out. There are many reports in the literature which clearly demonstrate that not only have all forms of sterilization, short of hysterectomy or bilateral oophorectomy, met with failures; but also that these simpler procedures of tubal sterilization are not entirely free from mortality and morbidity.

Recently Weinbaum and Javert (1) in a 20 year study involving 659 cases of sterilization, mostly tubal in type, reported 3 deaths (all cardiac) and 2 failures with a 9.1 per cent incidence of complications. In a paper now in press based upon 1830 tubal sterilizations performed at the Johns Hopkins Hospital (10) from 1936 to 1950, the total failure rate was 1:108 or 0.92 per cent. When tubal ligation was done in the puerperium the failure rate was 1:340, and when done at time of Cesarean section or hysterotomy it was 1:57. There were a total of 17 failures in a 55 per cent follow up representing 1022 patients. In this same follow up group there were 3 deaths (0.3 per cent); 2 from embolism and 1 from a subsequent ruptured ectopic pregnancy. There were 4 patients who subsequently had ectopic pregnancies in the stenosed tube resulting from the ligation.

To leave behind a uterus and cervix, after termination of the reproductive function of the woman by tubal ligation, is considered by many as inviting potential danger in an otherwise useless organ. Williams, Jones and Merrill (14) in a 10 year follow up of 200 patients with tubal ligation found that 24 per cent of these patients subsequently developed pelvic disorders (minor disorders and diseases of the cervix excluded). In the group of patients under 35 years of age 31 per cent developed complications; while in the group over 35 years of age, 37.3 per cent had complications. Prystowsky and Eastman (10) report a subsequent surgical operation rate of 9.29 per cent in their tubal ligation patients.

There are some physicians who believe the uterus has an endocrine function which makes it essential for the proper functioning of the ovaries. No positive evidence has as yet been produced to support this view. On the other hand, Davis (4) has shown that the ovaries continue to function after hysterectomy. Burford and Diddle

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(3) investigated this question in the monkey and came to the conclusion: "that hysterectomy in the *Macacus rhesus* is without effect upon the ovary, except for purely traumatic effects. The monkey affords no evidence that the uterus contributes any endocrine influence upon the ovary". Van Wagenen and Catchpole (12) also demonstrated that the removal of the uterus does not interfere with ovarian function in the animal. Bancroft-Livingston (1) studying vaginal cytology in women concluded: "the operation of hysterectomy with conservation of ovarian tissue does nothing to hasten the onset of ovarian failure or menopausal symptoms under 45 years. Over 45 years there is a most marked diminution in the number showing active smears and fluctuant levels of cornification—but by comparison with normal patients of the same age group fails to reveal a more rapid decline in ovarian function".

Dipple (6) found that 16.6 per cent of the women showed menopausal symptoms when hysterectomy was performed primarily for sterilization, while 67 per cent of the women had menopausal symptoms when the hysterectomy was done for pelvic disease. He concluded that the involvement of the ovaries in the disease rather than the hysterectomy itself, was the principal cause of endocrine failure.

Malignancy of the uterus (corpus and cervical) still continues to be a danger in the intact uterus. The incidence of 1 to 2 per cent cervical malignancy constantly demands our attention. The reported incidence of 7.8 per cent and 13 per cent carcinoma in the cervical stump by Kelley and Brawner (9), and Braund and Green (2) is even more disturbing.

In this study it is my privilege to report the clinic experience of the Obstetric Departments of the University Hospital and the Sinai Hospital in performing total hysterectomy at the time of Cesarean section and in the puerperium since 1951. For the most part these total hysterectomies were performed for the purpose of terminating the child bearing years of these women. However, all the operations were done for medical, obstetric or surgical reasons in both institutions. Grand multiparity (8) is viewed as an additional risk in pregnancy because of the increased maternal and fetal mortality in these women.

It has been our rule that no patient can be sterilized without first securing the written consent of both husband and wife after having explained to the couple what each operative procedure will accomplish. The patient then makes the choice as to tubal ligation or total hysterectomy. When puerperal hysterectomy is the choice the operation is usually postponed from 48 to 72 hours post partum in order to allow for some involution of the cervix. During this waiting period the patient is protected by antibiotics. At the University Hospital the patient also receives prophylactic anticoagulant therapy for the first 24–48 hours post-operatively. Blood is always ready in the operating room to be used as needed.

A total of 58 hysterectomies have been performed since 1951—consisting of 28 negro and 30 white patients. The ages varied between 20 and 44 years.

In Table 1 are listed the indications in these patients between the ages of 20–34 years. Only one case was done on the basis of grand multiparity, all the others had definite pathologic conditions.

In Table 2 however, where the patients were 35 years or older—29 had grand multiparity as the only indication—and the remaining 16 had multiple indications.

TABLE 1

Age	Cases	Indications
20	1	3rd Cesarean section
23	1	Neglected transverse lie, intrauterine infection, multiparity
24	2	1. Unrecognized inverted uterus 6 days postpartum—admitted from another hospital 2. Abruptio placenta, couvelaire uterus, Rh neg. sensitized, multiparity
27	1	Hydatidiform mole, hypertension, Inactive Tbc. para 4
28	1	Grand multiparity
31	2	1. Infected—retained placenta, P.P. hemorrhage—shock 2. Placenta previa—transverse lie, low cervical section—laceration of uterus traumatic
33	1	Diabetes, poor obstetric history, multiparity
34	4	1. Previous Cesarian section and multiparity 2. Neglected transverse lie, infected, multiparity 3. Multiple fibroid uterus 4. Fibroid uterus—uterine inertia—infected—dead fetus (total uterus removed unopened)
Total	13	

TABLE 2

Age	Cases	Indications
35	6	All for multiparity
36	7	4—Multiparity 1—3rd Cesarean section 1—Previous Cesarean section—hypertensive disease—multiparity 1—Hypertensive disease and multiparity
37	8	4—Multiparity 1—Chronic hypertension—multiparity 1—Previous Cesarean section—contracted pelvis 1—Multiparity—Placenta previa marginalis 1—Fibroid uterus, contracted pelvis
38	5	2—Multiparity 1—Multiparity—pre-eclampsia 1—Multiparity—rheumatic heart disease 1—Multiparity—diabetes—chronic hypertension
39	7	6—Multiparity 1—Multiparity—hypertensive disease
40	3	3—Multiparity
41	3	2—Multiparity 1—Chronic hypertensive disease
42	1	1—Multiparity—chronic hypertension
43	4	2—Multiparity 1—Multiparity—transverse lie 1—Multiparity—hypertensive disease
44	1	1—Multiparity—previous Cesarean section
Total	45	

TABLE 3

Method of hysterectomy	Number
Low cervical section and hysterectomy	10
Classical section and hysterectomy	4
Puerperal hysterectomy	43
Hysterectomy on the unopened uterus	1
Additional operative procedures	
Appendectomy	35
Single salpingo-oophorectomy	15
Bilateral S & O	7
Umbilical hernioplasty	3

TABLE 4
Complications

No.	Type	Treatment	Result	Discharged P.O. Days	Total Morbidity
1	Thrombophlebitis left iliac vein	Ligation of left iliac vein and removal of clot	Recovered	7th day following hyst. readmitted 10th day. Discharged 21st day.	11 cases 19%
1	Pyelitis & stitch abscess	Antibiotics	Recovered	7th day	
1	Pyelitis	Antibiotics	Recovered	8th day	
1	2 day fever	Antibiotics	Recovered	8th day	
1	1 day fever*	Antibiotics	Recovered	8th day	
1	Wound infection	Drained	Recovered		
1	Superficial wound infection	Local	Recovered	7th day	
1	Thrombophlebitis	Ligation of both saphenous veins	Recovered	7th day following hyst. Readmitted 21st day. Discharged 40th day.	
1	1 day fever*	0	Recovered	11th day	
1	Breast abscess	Incision and drainage	Recovered	10th day	
1	Febrile before* operation	Antibiotics	Recovered	19th day	
1	Febrile cause unknown	Antibiotics	Recovered	13th day	
1	Acute bronchitis	Antibiotics	Recovered	9th day	
1	2 day fever	Antibiotics	Recovered	8th day	

* Not counted in morbidity percentage

In Table 3 are listed the number and types of hysterectomies as well as other operative procedures performed at the same time. There were 14 Cesarean hysterectomies (10 low cervical and 4 classical sections), 43 puerperal hysterectomies and 1 hysterectomy on the unopened infected pregnant uterus. In addition there were performed

TABLE 5
Blood Transfusions

c.c.	No. of Cases	
none	9	
500	26	
750	4	
1000	15	
1500	1	Infected—dead baby—uterus removed unopened
2000	1	Badly traumatic laceration of lower uterine segment
3500	1	Abruptio placenta—couvelaire uterus—hypo-fibrinogenemia
4000	1	P.P. hemorrhage—retained placenta—atonic uterus

35 appendectomies, 15 unilateral salpingo-oophorectomies, 7 bilateral salpingo-oophorectomies and 3 umbilical hernioplasties.

Listed in Table 4 are the complications which followed these operations. There were 14 patients involved. Except for the 2 cases of thrombophlebitis and 1 case febrile before operation, all complications were essentially minor. Early ambulation was carried out in all patients. Most of these cases were discharged between the 6th and 10th day after surgery. All patients recovered. There were no maternal deaths and the morbidity rate was 19 per cent.

Many of these patients received 500 cc of blood by transfusion, only because their hemoglobin levels were low prior to operation. In Table 5 is listed the amount of blood given and number of patients transfused. The very large amounts of blood given to 4 patients were needed not because of hemorrhage as a result of the operation, but because of the pathologic condition which demanded hysterectomy.

Careful and accurate follow up studies on 30 patients were carried out. These patients were interviewed in order to ascertain if they had any complaints or symptoms; and they were examined to determine the anatomic results. From an anatomic and functional point of view the results were good to excellent in all cases. The vaginal canals were ample as determined by a medium size bivalve speculum and as confirmed by the patients after coitus. None of these women complained of dyspareunia, although some suffered this prior to the operation. Libido was either the same or improved following the operation. Some of this improvement was most likely because the fear of pregnancy was gone. None of these patients had any psychic reaction nor regrets about the loss of menses or their uterus. All were happy to be free of the monthly flow, especially those who previously suffered pain, profuse flow and incapacitation. There was no urinary incontinence and all vaginas were well supported. The patients were all pleased with the final results.

DISCUSSION

Our experience with these 58 cases of Cesarean hysterectomy and puerperal hysterectomy for purpose of sterilization or because of indicated pathology has revealed to us that the operation is technically not difficult. In many respects it appears easier to perform this operation in the recently pregnant than in the non pregnant woman.

It is simpler to identify the blood vessels because of their size and it is easier to ligate them. The pelvic tissues and fascial layers are more mobile and dissect with great facility. The bladder and its peritoneum can be stripped off the uterus and cervix with ease. The blood supply to the ovaries is increased and is less likely to be damaged, since the clamps can be placed a good distance away from these appendages. The ureters are more laterally located and thus further away from the entrance of the uterine vessels into the uterus. The vagina, because of recent hypertrophy, is lengthened and more mobile at this time. Hemorrhage as a result of the increased blood supply and the operative procedure is not a problem.

In addition there have been no difficulties encountered in performing other operative procedures at this time. Thus, appendectomy and umbilical hernioplasty have been performed without event. In some patients past the age of 35 years a unilateral salpingo-oophorectomy to partially reduce the chances of future ovarian disease has been done. In women over 40 years old there has been no hesitancy to preform a bilateral salpingo-oophorectomy as definite prevention against ovarian malignancy. It is felt that any menopausal symptoms in this age group would be mild and could easily be controlled by appropriate hormonal therapy.

The complications and resulting morbidity encountered in this present series is apparently no greater than would be expected from a tubal ligation. Most of these conditions producing morbidity were the result of minor conditions and/or unknown etiology and have responded well to appropriate therapy.

This procedure guarantees no failure of sterilization whereas tubal ligations do have an incidence of failures of 1-200 as reported by Dickinson and Gamble (5). Nor are tubal ligations free of complication. The findings as reported from the Johns Hopkins Hospital shows that death can occur even several years later from ruptured tubal pregnancy in an artificially produced stenosed tube after tubal ligation.

Some of the objections raised against total hysterectomy for sterilization have been directed at the possible shortening of the vagina and subsequent dyspareunia. A follow up of 30 patients demonstrate that the shortening of the vagina does not occur and that libido is as good if not better after the operation than before. It appears that the puerperal vagina is longer and thus the danger of shortening the canal is diminished in puerperal hysterectomy.

All our patients were pleased to be free of the menstrual cycle and its accompanying discomforts. We have had no complaints referable to menopause or psychic disturbances. All our patients interviewed were very pleased with the result and none regret the operation.

This series alone is too small to be able to draw definite conclusions concerning the ultimate safety of this procedure. Nevertheless the results reported here are in accord with those obtained by Davis in 100 cases, and by Dyer, et al, in 85 cases. With the operative technique of today, with blood and with chemotherapy the operative risk for total hysterectomy is greatly reduced. There is every reason to believe that Cesarean hysterectomy and puerperal hysterectomy will not only yield immediate good results, but will also remove a useless organ which otherwise would continue to remain a potential danger to the health and life of the patient.

CONCLUSIONS

1. Fifty-eight cases of Cesarean total hysterectomy and puerperal total hysterectomy have been reviewed.
2. When Cesarean section is not indicated there is no reason for doing a combined operation.
3. There has been no mortality.
4. Post operative complications have been few and for the most part mild in type.
5. Most patients have been discharged between the 6th to 10th day post operative.
6. A follow up study of 30 cases showed good results anatomically, functionally and psychologically.
7. Total hysterectomy guarantees sterility and removes the danger of uterine and cervical malignancy or disease.
8. Evidence indicates that the uterus is not essential for normal ovarian function.
9. Prophylactic removal of both ovaries after the age of 40 years in these patients is believed to be a good procedure and should be considered.
10. The gross morbidity was 19 per cent.

REFERENCES

1. BANCROFT-LIVINGSTON, GEORGE: Ovarian survival following hysterectomy, *Jour. Obst. and Gynec. British Emp.* vol. **61**-p: 628-638, 1954.
2. BRAUND, RALPH R., AND GREEN, C. R.: Cancer of the cervical stump, *Amer. Surg.*, **17**-p: 830-836, 1951.
3. BURFORD, T. H., AND DIDDLE, A. W.: Effect of total hysterectomy upon the ovary of the *Macacus rhesus*, *S.G.O.* **62**-p: 701-707, 1936.
4. DAVIS, M. EDWARD: Complete Cesarean hysterectomy, *Am. Jour. of Obst and Gyn.* **62**-p: 838-853, 1951.
5. DICKINSON, R. L., AND GAMBLE, C. S.: *Human Sterilization*. Waverly Press, 1950.
6. DIPPLE, A. LOUIS: The Role of hysterectomy in the production of menopausal symptoms, *Am. Jour. of Obst. and Gyn.* **37**-p: 111-113, 1939.
7. DYER, ISADORE; NIX, FRANK GILBERT; WEED, JOHN C.: Total hysterectomy at Cesarean section and in the immediate puerperal period, *Am. Jour. of Obst. and Gyn.*; **65**-p: 517-527, 1953.
8. EASTMAN, N. J.: *New York Jour. Med.*, **40**: p. 1708, 1940.
9. KELLEY, ALBERT J., AND BRAWNER, DARNELL L.: Experience of the Savannah Tumor Clinic in carcinoma of the stump of the cervix, *Am. Jour. of Obst. and Gyn.*; **66**-p: 711-717, 1953.
10. PRYSTOWSKY, HARRY, AND EASTMAN, N. J.: Puerperal tubal sterilization: An analysis of 1830 cases—(In Press)
11. THOMAS, WALTER L.: Preconception insurance panhysterectomy versus tubectomy, *South Med. Jour.*, **46**-p: 787-790, 1953.
12. VAN WAGENEN, G., AND CATCHPOLE, H. R.: Hysterectomy at parturition and ovarian function in the Monkey (*M. mulatta*), *Proc. Soc. Exp. Biology and Medicine* **46**-p: 580-582, 1941.
13. WEINBAUM, JEROME, AND JAVERT, CARL T.: Sterilization at the N.Y. Hospital over a 20 yr. period (1932-1952), *West. Jour. Surg. Obst. and Gyn.*, **62**p: 95, 1954.
14. WILLIAMS, EDWIN L., JONES, HARRY E.; AND MERRILL, ROBERT E.: The subsequent course of patients sterilized by tubal ligation, *Am. Jour. of Obst. and Gyn.*, **61**-p: 423-426, 1951.

CONGENITAL VAGINAL ATRESIA ASSOCIATED WITH PREGNANCY*

DONALD CAMPBELL, M.D.

TORONTO, CANADA

A review of the literature reveals 8 cases reported as congenital absence of the cervix, with or without associated pregnancy. These and the case which I am presenting at this time would appear to be misnomers, for as Dannreuther (1) pointed out, it is embryologically inconceivable that such an entity could be present where vagina and uterus are developed.

This patient was first seen at age 20 in the obstetric outpatient department of the University Hospital, Baltimore. Her last menstrual period was given as October, 1950, with an expected date of confinement of July, 1951. On examination, the cervix could not be palpated and she was admitted to the hospital at 16 weeks gestation for examination under anaesthesia.

The history revealed that menarche had occurred at age twelve. She had always experienced moderate crampy abdominal pain on the day preceding flow. Her interval was 30 days with duration of menses of 5 to 6 days. The history was negative for vaginal infections or injuries—episodes of leukorrhea were denied.

On examination under anaesthesia, the external genitalia were found to be normal. The introitus was marital. The vagina measured six centimeters being smooth-domed at the vault with no cervix uteri palpable. The isthmic portion of the cervix was thought to be palpable. Careful examination of the vault disclosed a tiny opening slightly smaller in diameter than a match-stick which was just to the left of the midline. The uterus itself was enlarged to the size of a 16-week pregnancy—no adnexal pathology was detected.

Subsequent to discharge, the patient was followed in the obstetric outpatient department. The only abnormal feature was a positive serology which was treated during her prenatal course.

The patient was readmitted for observation at approximately 37-weeks of pregnancy. Forty-eight hours later she spontaneously¹ started in labor. Two to three hours of careful observation was allowed, to see if any changes in the vault occurred. None did, so a low segment Caesarean section was performed with the delivery of a premature living female child weighing 2381 grams. Following removal of the placenta, the lower uterine segment was explored. An orifice 3 to 4 cm. in diameter was found, the surrounding uterine tissue being quite thin. The examining finger was inserted through this orifice and encountered a small tubular canal which would not admit a finger. This canal was determined to be 1 cm. in length and terminated as the minute orifice in the vaginal vault.

The post-operative course was initially febrile, but the patient responded to antibiotics and was discharged on her ninth post-partum day.

The patient was seen again 2½ years later at which time the same findings in the

* Read before the Maryland Obstetrical and Gynecological Society, Hagerstown, Maryland, May 13, 1954.

vagina were noted. No cervical isthmus could be identified on palpation. The uterus was felt to be normal in size. Cystoscopic examination was normal except for inability to catheterize the left ureter. A normal kidney collecting system was demonstrated by intravenous pyelograms. The opening at the vaginal vault was dilated sufficiently to admit a cannula. A hystrogram was done which showed a relatively normal uterine outline but non-patency of both tubes.

The principal justification for presenting this case is in relation to the embryologic considerations. To this date the developmental aspects of the vagina remain the most controversial of any part of the generative tract. In spite of the fact that similar cases have heretofore been reported as cervical agenesis and congenital absence of the cervix, it would appear that the basic developmental defect is related to that of the vagina rather than the cervix.

Putterman (2) refers to 3 previous cases in the English literature in addition to his own, all of which were associated with pregnancy. The vaginal size was reported

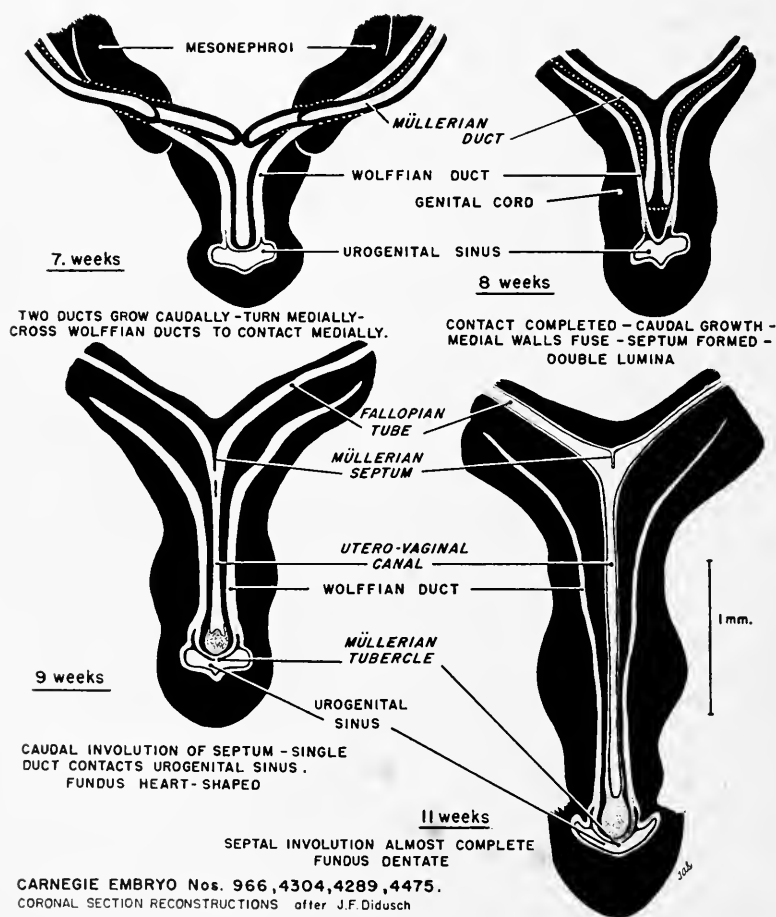


FIG. 1

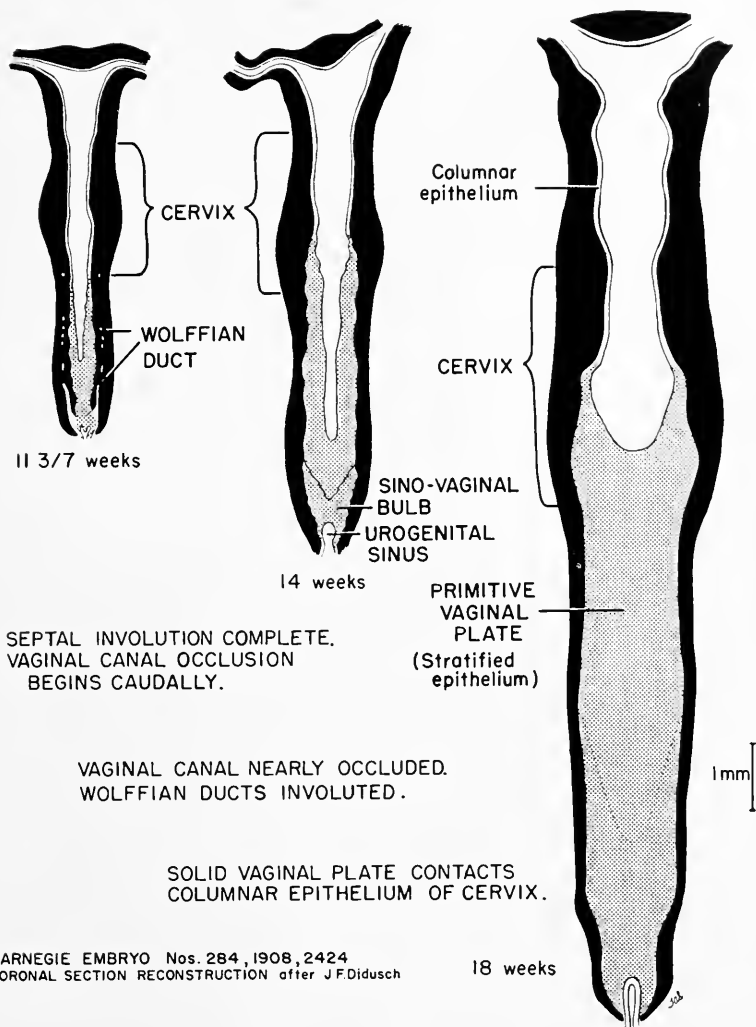
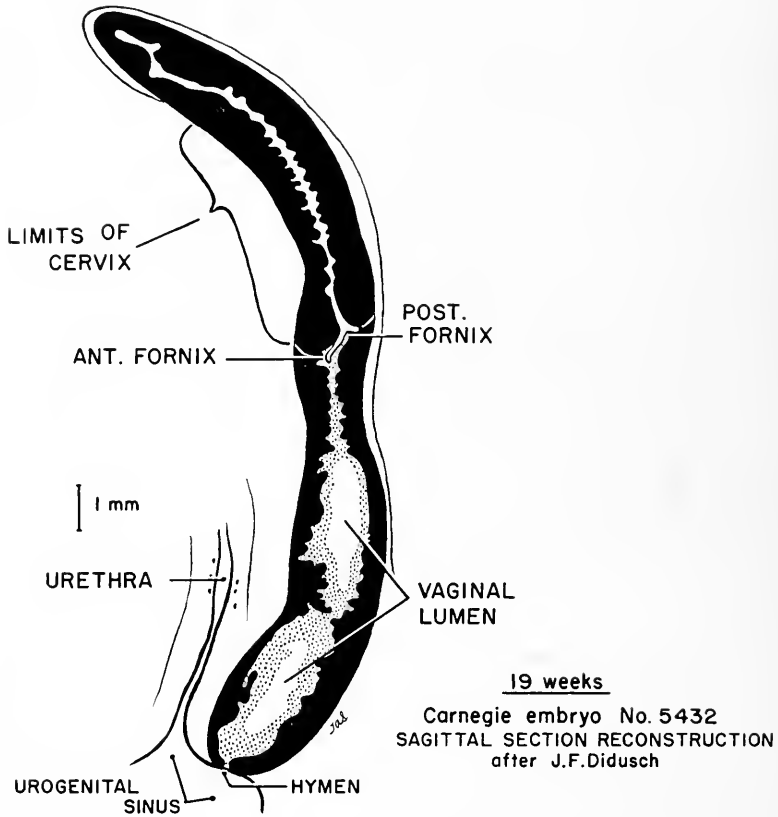


FIG. 2

as normal in his case and instead of a cervix, a tiny vagino-uterine connection was observed at the vaginal vault. Hughes (3) reports a similar case associated with pregnancy. Donato (4), Davis and Haszard (5), Lauro (6), and Machado (7) all record cases with similar circumstances.

Loup (8) reported 2 cases of absence of the cervix and atresia of the vagina in which the presenting picture was hematometros. In one of his cases a hysterectomy was performed, the sections showing continuity of vagina and uterine cavity. In spite of his designation of the condition, he states, "Sections showed the trees of life characteristic of cervix."

It is not within the scope of this paper or indeed my ability to review the literature



CENTRAL EPITHELIUM OF PRIMITIVE VAGINAL PLATE BEGINS DEGENERATION TO FORM LUMEN. HYMENAL OPENING AND VAGINAL CANALIZATION — COMPLETED AT ABOUT 21 WEEKS.

FAILURE OF INVOLUTION OF VAGINAL PLATE IN VARYING DEGREES RESULTS IN GYNATRESIA, IMPERFORATE HYMEN, HEMATOCOLPOS, HEMATOMETRA, OR HYDROMETROCOLPOS.

FIG. 3

in regard to the embryology of the vagina. Rather, I have attempted to adapt the findings of this case most logically with what has been previously published in this regard.

As summarized by Koff (9) there are 4 main theories of development of the vagina:

1. Vagina mainly of Mullerian duct origin—the lower end of Wolffian duct origin, Mijsberg (10).
2. Vagina entirely Mullerian in origin, Bloomfield (11) and Hunter (12).
3. Vagina entirely derived from Wolffian ducts.
4. Vagina partially or totally derived from urogenital sinus.

While normal development of the Wolffian ducts may be important to normal development of the Mullerian system (13, Gruenwald), the direct participation of the Wolffian ducts in the formation of the vagina now appears to be disproven. The more



FIG. 4

current difference of opinion concerns the variation in Mullerian duct and urogenital sinus components of the vagina.

In reviewing the development of the Mullerian system I quote from Koff (9), "Solid tips of Mullerian ducts tunnel caudally through mesenchyme approach each other in the midline, fuse and reach the posterior wall of urogenital sinus which they push out forward to form the Mullerian tubercle. Sino vaginal bulbs (from urogenital sinus) become solidified by proliferation of lining epithelium and fuse with tips of Mullerian ducts and form the solid primitive vaginal plate. This solid vaginal plate grows in all dimensions. Central cells of the now solid, vagina, break down to form the vaginal cavity. The cranial end of the vagina is demarcated by the formation of anterior and posterior fornices as solid epithelial projections. The caudal end expands, pushes in the posterior wall of the urogenital sinus and extends along the posterior wall to form the caudal segment of the hymen." Therefore, the upper four-fifths of the vagina is the Mullerian duct in origin and the lower one-fifth is from the sino vaginal bulbs of urogenital sinus.

Bloomfield and Frazer (11) and Hunter (12) maintain that the entire vagina develops from Mullerian ducts and where the Mullerian duct perforates into urogenital sinus, the hymen is formed. Vilas (14) objected that the stratified squamous epithelium of the vagina could not have developed from coelomic epithelium. This has been explained on the basis of developmental metaplasia. But now the more prevalent opinion derives the lining epithelium of the vagina from the urogenital sinus. Its normal development is dependent on normal Mullerian ducts, however. Palmstroem and Getz (15) cite a case of their own which appears to substantiate this latter view in as much as there were two areas of atresia, one at the vault and one at the hymen.

The urogenital sinus epithelium then appears to invade the Mullerian duct cavity to the level of the cervix. Novak (16), commenting on Meyer's work, says in part that all the Mullerian epithelium is replaced by the invading epithelium of the urogenital sinus. This replacement extends to the cervix and even into the cervical canal. This invasion is in the form of a solid epithelial lamina which subsequently canalizes to form the vaginal cavity. Failure to recanalize in part would then account for the partial atresias of the vagina and would also explain the presence of minute communications through the uncanalized portions as exemplified by the case under discussion.

If then, on the basis of the above remarks, we abandon the term, "cervical agenesis," we should find some more applicable descriptive term. One of Dannreuther's (1) cases which seems to be almost identical with ours it referred to as "congenital vaginal occlusion of the cervix." Rubin, in discussing the case, suggests cervical phimosis. If we are to consider the cause of the condition, an arrest in normal development of the vagina, it would seem wise to retain that part of the anatomic connotation in the diagnosis.

By way of management, the reported cases exemplify the indications for corrective measures. One of Dannreuther's (1) cases presented with sterility—a plastic operation of the vaginal vault was performed, the patient later becoming pregnant. His other case, although not the same anatomic defect, presented with dysmenorrhea, which symptom was relieved following incision of the vaginal septum. Loup's (8) cases and that case reported by Palmstroem and Getz (15), presented with hematometros—one patient had a hysterectomy and symptomatic relief was obtained in the other two by plastic repairs of the vaginal vault.

Of those reported associated with pregnancy, where the condition was recognized, the management was fairly straightforward. Caesarean section is mandatory under the circumstances.

A case of congenital vaginal occlusion of the cervix has been presented and similar cases reported as cervical agenesis have been reviewed. It is hoped that such a case may possibly assist in shedding light, from a clinical standpoint, on the embryologic development of the vagina.

BIBLIOGRAPHY

1. DANNREUTHER: *Am. J. OB & Gyn* 826: **47**, 1944
2. PUTTERMAN: *N.Y. State J. of Med.* 1748: **51**, 1951
3. HUGHES: *M.J. Australia* 826: **47**, 1944
4. DONATO: *An. de ateneo, Buenos Aires* 185, 1945
5. DAVIS & HASZARD: *Can. M.A.J.* 425: **35**, 1936
6. LAURO: *Arch di Obstet e ginec* 233: **4**, 1940
7. MACHADO: *Rev. Med. Brasil* 243: **5**, 1939
8. LOUP: *J. Internal Coll. Surg.* 295: **4**, 1941
9. KOFF, A. K.: *Carnegie Contrib.* 59: **24**, 1933
10. MIJSBERG: *Z. Anat Entw.* 684: **74**, 1924
11. BLOOMFIELD & FRAZER: *J. Anat.* 9: **62**, 1927. *Contrib Embry.* 91: **22**, 1930
12. HUNTER, R. H.: *Carnegie Contrib.* 91: **22**, 1930
13. GRUENWALD: *Beitr z path Anat* 309: **100**, 1938
14. VILAS: *Arch. Gynak.* 655: **152**, 1933
15. PALMSTROEM & GETZ: *Acta OB Gyn Scandinavia* 400: **29**, 1950
16. NOVAK, E.: *Progress in Gynecology*, Miess & Sturgis, 1946.

SURGERY IN THE REDUCTION OF PERINATAL MORTALITY*

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Operative measures have played a significant role in the reduction of infant mortality. These measures have been merely one of the implements, which have been integrated as an offensive team to overcome some of the persistent etiologic factors involved in fetal and neonatal mortality. Unlike maternal mortality the process of evolution has not been rapid. However, the major advances in the reduction of maternal mortality have aided in reducing the infant deaths, but with much less success.

In the use of operative measures the prime consideration has been selection. This selection has two components, namely, the selection of the type or types of operations and secondly, the selection of the indications. The selection of the operative type may be likened to the Darwinian theory of natural selection, in that survival of the best operative procedure has been predominant. Many have fallen by the wayside, or into disrepute, such as accouchement force, destructive operations of one type or another, the opinion that forceps delivery must be completed once it has been started, and finally internal podalic version and breech extraction. All of these have in the past played havoc with fetal lives as well as maternal soft tissue, and unfortunately, still do to some extent. Others have continued to gain momentum, such as episiotomy, the forceps delivery and making long strides, and possibly too many of them, Cesarean section.

One does not usually consider the operation of episiotomy as a method of reducing infant mortality. The reduction of soft tissue resistance, however, by this cutting operation, has probably saved many first born skulls from injury, caused by the persistent pounding of the head with each succeeding uterine contraction against the sometime rigid mass of tissue. When it is used in conjunction with the control low forceps even in routine delivery, it further prevents the rapid expulsion at the time of greatest dilation of the perineal body and vulva, preventing rapid pressure changes within the intracranial cavity. Of the two procedures, to my mind the more important is the episiotomy, although for control of delivery, the forceps far exceeds the Ritgen maneuver.

There have been some attempts in the recent literature to condemn the mid forceps operation. This has resulted from the high fetal death rates from its use. The opponents of this procedure would consummate the delivery by Cesarean section, rather than vaginally under certain circumstances. If it is the opinion of the operator that once forceps are applied, that one's bridges are burned and that vaginal delivery must be accomplished regardless of the outcome to the infant, I cannot agree with them. How does one know without applying forceps, whether the lack of descent during the second stage results from an easily corrected abnormal position, or that

* Read before the Sectional meeting of the Am. Acad. OB & Gyn. in Washington, D.C. April 11, 1954.

TABLE I
Mid Forceps in Contracted Pelves

Years	No.	Infant deaths	Per cent loss
1947-1951.....	32	7	21.8
1951-1954.....	30	1	3.3
Cesarean section.....	6	0	0
Vaginal.....	24	1	4

TABLE II
Elective Cesarean Section Infant Loss

	Sections	Loss	Per cent
Term.....	168	2	1%
Premature.....	12	0	0%
	180	2	1%

the lack of descent is caused by a rigid mass of soft tissue, or lack of use of the abdominal muscles, or insufficient uterine contractions, or even poor flexion of the fetal head? In reducing fetal mortality one must also consider the effects on the maternal organism. There is a constant battle between the refusal to endanger an infant and an equally strong desire to have an uninjured mother. If infants of this sort are deliberately delivered vaginally, a high fetal death rate results. If no attempt at vaginal delivery is made, many unnecessary Cesarean sections will be done. Is a Cesarean section a maternal insult, when not required? I feel certain that this question can only be answered in the affirmative. There is a middle course open—attempted mid forceps. Several requirements are needed to make this procedure successful: 1) ability to correct abnormal positions and extension, if present, 2) the ability to accurately apply forceps, 3) the knowledge which can only be gained by experience, of not exerting too much traction, and depending more on moderate vis a tergo for descent of the presenting part, 4) the courage to realize that further traction and manipulation, if it is excessive, will damage the infant, and 5) that nothing can now be lost by delivering the infant abdominally. A prime prerequisite for this procedure is definitely knowing that the head has entered the superior strait, and this can only be determined by the roentgen-ray.

From 1947 to 1951 at the University of Maryland Hospital in patients with contracted pelves, there were 32 mid forceps deliveries. (Table I). Among these deliveries there were 7 infant deaths, a loss of 22 per cent. During that period of time we felt obligated to consummate vaginal deliveries once it was attempted. Since 1951 we have attempted mid forceps deliveries in contracted pelves on 30 occasions. Twenty-four times the delivery was successful vaginally and 6 times the forceps were removed and Cesarean section performed. There was one fetal death in this group and that infant was dead prior to the onset of labor, so it cannot be considered a pertinent death. This material is not conclusive but it does demonstrate a trend for improvement in one segment of this weighty problem.

The Cesarean section as an operative tool in the reduction of infant mortality is

TABLE III
Perinatal Mortality Contracted Pelves

	Cesarean section rate	Infant loss
1947-1951	30.3%	3.0%
1951-1954	22.8%	0.9%

a two-edge sword just as sharp as the mid forceps. It may be life-saving from the infant's viewpoint, but its use does not guarantee a living infant. (Table II). If all patients were delivered by elective Cesarean section at term, the fetal and neonatal mortality rate would be about 1 per cent. In our own clinic there were two infant deaths in the last 180 sections of purely elective nature, mostly repeat cases. One must be extremely careful of the indications for Casearean section from the fetal viewpoint for its use to be successful. This is not an easy project for solution.

As an example let us consider the contracted pelvis problem, which is a major one in Maryland because of the large non-white population. From 1947 to 1951 there was a basal study made of these patients without any definite plan of management. The section rate among the contracted pelves from all causes was 30.3 per cent with a pertinent fetal mortality rate (excluding death before labor, and other extraneous causes of death) of 3.0 per cent (Table III). From 1951 all patients were placed under one method of management. Since then the section rate has dropped to 22.8 per cent and the pertinent death rate has dropped to 0.87 per cent. This is only a trend and at this point is not statistically significant. The main principle in management of these patients has been an old advertising slogan:—"You never can tell until you have tried." In other words, under careful supervision there has been trial of labor in all patients who did not have any other complication. Generally speaking, one half of these sections were done for cephalopelvic disproportion and uterine inertia. The remainder, for such indications as previous section, hemorrhage, toxemia and abnormal lies. The selection has been a combination of operation and indication with marked individualization. We are still making errors, but mainly in the form of not being able to recognize incipient increase in fetal anoxia, and the amount of fetal molding that can occur in any one individual skull without intracranial damage. This may emphasize that increase in section rate is not necessary, if infant mortality is to decrease.

In consideration of the opposite viewpoint, that is, that decrease in infant mortality rate must be accompanied with an increase in section rate, let us examine placenta previa. (Table IV). In this clinic from 1920-1929 there were 115 cases of placenta previa. Seventy delivered vaginally with an infant mortality rate of 61 per cent. The section infant death rate in 45 cases was 18 per cent. From 1950 to the present, the section rate has increased from 39 per cent to 56 per cent, and as you can see from the mortality rates, this rate is probably not high enough. We have not been able to decrease the section infant mortality, but with selection of patients the mortality from the vaginal route has markedly decreased. Individualization of management has not proceeded far enough, in that the section rate probably should be higher in placenta previa to further decrease our fetal and infant loss.

TABLE IV
Placenta Previa

	1920-1929		1950-1954	
	No.	Fetal loss	No	Fetal loss
Vaginal.....	70	61%	23	26%
Cesarean section.....	45	18%	29	17%
Total.....	115	44%	52	21%

TABLE V
Uterine Inertia

	No.	Fetal loss
Vaginal*.....	286	6.7%
Cesarean section†.....	86	5.8%

* 20% received pitocin stimulation

† 12% received pitocin stimulation

TABLE VI
Diabetes

	No.	No. Infant deaths	% loss
Cesarean section.....	27	1	3.7
Vaginal.....	70	12	17.2
Total.....	97	13	13.4

Uterine inertia is a problem that we have not as yet solved satisfactorily. Since 1950 we have classified 372 patients as having uterine inertia. It may be that our definition is too loosely applied (Table V). Generally speaking any patient who does not have satisfactory uterine contractions and make satisfactory progress is classified as having uterine inertia. Two hundred and eighty six of these were delivered vaginally, of which 20 per cent had pitocin stimulation, with a mortality rate of 6.7 per cent. Eighty six were delivered by section, 12 per cent having received pitocin stimulation, with a fetal loss of 5.8 per cent. We are not proud of these results which apparently results from several errors on our part. These mistakes are:— 1) inability to recognize at what time during labor these infants have been undergoing increased anoxia; 2) since our fetal loss in contracted pelves with uterine inertia has been nil, it appears that observation of labor in patients with uterine inertia and normal pelves has not been strict enough; 3) not using pitocin soon enough in normal pelves; and 4) maintaining labors too long in normal pelves with uterine inertia. After analyzing these patients, it is our opinion however that the mortality rates in this complication should be no higher than with eutocia, if we correct the above mentioned errors.

If this discussion may take a lighter vein, let us see how statistics can lie and reach false conclusions. (Table VI). The subject will be diabetes and Cesarean section. Of

our last 97 diabetics, seen since 1950, 27 were delivered by Cesarean section with a fetal loss of one infant or approximately 4 per cent. Seventy patients delivered vaginally and 12 infants died, a loss of 17.2 per cent. This vaginal death rate is four and one-half times as great as the Cesarean section death rate. This, I believe without actually analyzing it, is statistically significant, as analyzed by the chi square test. The difficulty arises in the fact that 5 of these infant deaths were in prematures weighing between 1000 and 1500 grams, and 4 were in patients in whom, unfortunately the diagnosis of diabetes was not made until after delivery. Correcting these 9 infant deaths there remain 4. Now there is slightly more than 4 per cent. We are attempting to follow in the management of the diabetic the general principles as laid down by Flowers, as they were recently recorded in the *Southern Medical Journal*. These principles are:— 1) strict medical care of the diabetes with its various implications; 2) attempts at prevention of the obstetric complications without the use of the hormone therapy; 3) delivery at approximately the 36–37th week, depending on the estimated fetal size by whichever route is feasible; and 4) careful pediatric care in the neonatal period. It is not our tenet to hold that section is the important factor in fetal salvage. It is our opinion that the timing of the delivery is the more important factor, plus excellent antenatal care.

There are many other complications of the pregnant woman which may be treated by operative means with one's eye on reduction of infant mortality, such as breech presentation, transverse lie, prolapse of the cord, Rh complications, the toxemias of pregnancy, and prematurity. Space does not allow discussion of these varied topics.

There has been infused throughout this discussion a basic philosophy. We should as protectors of the unborn infant follow certain precepts. They may be stated somewhat as follows:— 1) the age of "blood and thunder" obstetrics has been relegated to the honour of the past and with admiration and esteem for the pioneers of this century whose courage, insight and foresight has reduced maternal mortality to its gratifyingly low figure. While reducing maternal mortality it was necessary for them to unwittingly ignore the infant, yet they materially decreased fetal loss. Let us not forget the teachings of these courageous men. 2) While remembering their advances, we must concentrate now on the infant. Better understanding of the fetal-maternal relationships, particularly of oxygen exchange during labor must be investigated; further work on skull molding and its various limits in infants must be evaluated; means of recognizing early infant distress must be devised; the cause and prevention of hyaline membrane disease must become known, causes of premature labor must be elicited—there are many others too numerous to mention today. In other words, the second point in this philosophy is the importance of pertinent investigative work. The third can be accomplished now. Eternal vigilance during labor is exacting, boring, and uninteresting. There are infants now being born dead, however, whose lives may have been saved with constant observation during labor, particularly when it is accompanied with studied, mature judgment, taking into consideration both the mother and the infant.

In conclusion it may be stated that, 1) episiotomy is here to stay; 2) the mid forceps operation should not be sold short; and 3) Cesarean section can decrease infant loss if proper selection is used—this does not infer that an increase in Cesarean section rate is mandatory.

(*Special Article*)

EXPERIENCES WITH ECLAMPSIA*

WILLIS E. BROWN, M.D.†

It is indeed a privilege and an honor to be invited to write a section of this Festschrift in honor of Doctor Louis H. Douglass. The Obstetricians and Gynecologists of the country join with the University of Maryland in extending our felicitations to one of the University's eminent citizens. Doctor Douglass has long been associated with the University of Maryland as an undergraduate student, an intern and resident, a junior member of the faculty and, since 1938, as Professor of Obstetrics. During his long career in the service of medical education through his specialty, many original articles have come from his pen—covering a variety of subjects dealing with the health and welfare of the gravid and parturient woman.

His lifetime has seen great changes in the practice of our specialty. It has been his duty to guide these changes and his privilege to study and report them to his colleagues throughout the country.

During his professional career our understanding and care of the eclamptic woman has seen marked changes. In a recent publication, Doctor Douglass stated that "While we do not know the etiology of this disease, a physician should feel a certain degree of guilt at its occurrence." Circumstances have provided the University of Arkansas School of Medicine with an unusual opportunity to see a large number of eclamptic women referred to us from the underprivileged of our State who have not had the benefit of prenatal care.

The University Hospital receives indigent patients from the entire state, admitting a large number of medically neglected gravid women showing edema, hypertension, albuminuria and convulsions. Since circumstances deny us any control of their gravid state prior to the onset of eclampsia, it seemed wise to embark upon a clinical experiment in which the treatment of the major symptoms of this disorder might be studied. Consequently, we inaugurated a program for the control of edema, the control of hypertension, and the control of convulsions, individually.

From 1949 through 1954 there were 125 eclamptic women entering our hospital. The experimental intervals were generally changed at the onset of a fiscal year on July 1st, and usually ran for 1 or 2 years. As will be indicated below, following the critical study of each of the three major symptoms of eclampsia, we undertook an experimental series to appraise the effect of hospitalization alone upon this disease.

This report is a resume of our observations on eclamptic women treated at the University of Arkansas School of Medicine during the interval from July of 1949 through December of 1954. Since the conclusion of the above 4 study categories in July of 1953, all eclamptic women (25) were managed by a combination of all the above described therapeutic regimens.

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The first symptom to come under study was edema. It was thought that perhaps the storage of sodium and water in some wise limited the diffusion of oxygen to the tissues, and might be responsible for the increased arterial spasm and elevated blood pressure as a compensatory mechanism to carry oxygen to the distal areas. For 1 year all of the eclamptic patients were treated intensively with diuretic agents, essentially alone. They were given intravenous ammonium chloride, mercurials, and dextrose. The average patient lost 9 pounds in 3 days, the greatest loss was 15 and the smallest was 7 pounds. Despite this rather profound and effective diuretic response, 2 of these 20 eclamptic women died with a maternal mortality of 10 per cent.

Our attention was then directed to the control of convulsions, and for 2 years the patient's convulsions were promptly and effectively controlled with deep sedation, primarily using avertin. Of the 42 women so managed, there was a total of 3 convulsions after the patients reached the hospital, indicating reasonably effective control of the eclamptic seizures. Two women died, or a mortality of 7 per cent.

Hypertension was the third symptom selected for study and veratrum was employed as the hypotensive agent. Eighteen patients with eclampsia were treated with intravenous and intramuscular veratrum solutions to the prompt control of their blood pressure. Despite the fact that the blood pressure of all women was lowered to 140/90 or below, 4 women continued to convulse and 2 women died, a maternal mortality of approximately 11 per cent.

Thus, despite the effective control of edema, convulsions and hypertension, the maternal mortality rate was 7 per cent and was approximately the same in each of the 3 series of these patients.

It seemed wise to explore the role of some common denominator in the care of these patients; perhaps hospitalization alone was the responsible factor. For 1 year (1953) all eclamptic women were treated by hospitalization alone, the major form of care being supportive mechanisms such as oxygen for cyanosis, intravenous 5 per cent dextrose to replace the insensible loss of water, side rails and mild sedation for excessive agitation, and tender loving care by the nursing staff. Fortunately, none of these 25 women died.

A critical study of these 4 groups of women indicated that with certain minor exceptions the clinical aspects were almost the same. While the maternal mortality was lowest in the group treated by hospitalization, we are inclined to believe that this represented a chance of sampling rather than any true clinical difference. The fetal mortality was highest in the veratrum group and approximately the same in the diuretic and hospitalization group. Blood pressure response was most satisfactory in the sedation and veratrum group and poorest in the diuretic and hospitalization group.

Following the conclusion of this series of patients, it was decided to combine the above 3 forms of therapy as indicated by the needs of the patient but to rely primarily on tender loving care as our chief form of therapy. From December of 1953 through December of 1954 there were 25 additional eclamptics treated in this manner. Two women died with a maternal mortality of 8 per cent; 4 infants died with a mortality of 15 per cent.

It is indeed a privilege to have had an opportunity to study 125 eclamptic women in

the past 6 years. These women have taught us much. It has become apparent that the clinical manifestations of this disease may involve the entire visceral system, showing clinical evidence in the brain, liver, heart, eye, kidney, and occasionally other visceral areas.

It has also been apparent that the precipitating mechanisms are quite variable. At times infection, emotional difficulties, hypertension, acute renal disease, and cerebral hemorrhage have all played a role in the onset of the convulsive episode.

The cause of death in these patients appears to be determined more by the reserve of a given visceral system than by any specific therapy carried out. Survival appears to be determined more by the degree of visceral damage prior to the onset of hospitalization and medical care than by any specific form of therapy now available.

As a corollary of this study we surveyed the effect of prenatal care on this disease. From July, 1949, through December, 1953, there were slightly over 11,000 births at the University Hospital. During this interval, there were 105 eclamptic patients, 89 of whom had never been seen by us before. Sixteen had been registered in our prenatal clinic but only 6 had been seen on two or more occasions. Thus there were 95 women who had no prenatal care, or less than two prenatal visits.

During this interval nearly 8,000 women had two or more prenatal visits, only 6 of whom developed eclampsia, an incidence of 0.08 per cent, and none of these women died. Concurrently, there were 1,600 non-registered women admitted to our hospital, 96 of whom developed eclampsia, or an incidence of 7 per cent; 5 of these women died, or a mortality of 6 per cent.

Such intensive experience with this protein disease of pregnant women has been a great help to us in understanding the clinical manifestations of this disorder. It is apparent to us that prenatal care is far more important than the therapy of the eclamptic woman. Prenatal care prevented the development of convulsions in all but 6 of 7,763 registered women and none of these eclamptic women died.

Following the development of eclampsia our observations suggest that gentleness and moderation is the keynote of success in these compromised women. Tender loving care seems more important than any other specific form of therapy which is available in our present day armamentarium.

In closing this communication, we should like to salute the University of Maryland for having had the privilege of the long continued association with an honored Alumnus and great clinician, Doctor Louis Douglass, and to extend our felicitations and best wishes to him as he retires from the more strenuous duties of Professor to assume that coveted role of Emeritus Professor. We look forward to receiving his continued guidance and counsel from this most honored position in the hierarchy of medical education.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE, MARYLAND

Clinical History

This 20 year old colored female became nauseated in the 34th week of gestation, developed edema, and vomited repeatedly. She was able to work through half the day before admission. On the day of admission the patient had a severe nosebleed and a generalized convulsion while in bed. At this time she was irrational. There was an empty Bromo-Seltzer bottle at the bedside. While enroute to the hospital, the patient suffered a second convulsion and later a third, after admission to the hospital.

Going back in this patient's history, it was found that 3 years before the present pregnancy she aborted after 15 weeks' gestation. Six years before, she had had her tonsils and adenoids removed. There was no indication at that time of a systemic disease.

Her present pregnancy appeared to be normal until the last trimester, when the terminal illness began. Although she was told to make regular visits to the prenatal clinic, she failed to do so.

At her last admission the examining physician observed her to be irrational, thrashing in bed and dyspneic. Her blood pressure was 166 systolic over 100 diastolic. The pulse and respiratory rates were normal. The face was edematous; the lips, cracked and bleeding. A lipoma was found on the right temple. A physical examination of the heart and lungs found them to be normal. By palpation the fundus of the uterus was found to be 24 cm. above the symphysis pubis. The foetal heart was not heard.

The laboratory reported a hemoglobin level of 95 per cent; sugar, of 81 milligrams per hundred cubic centimeters of blood; carbon dioxide combining power, 45 volumes per cent; and urea nitrogen, 16 milligrams per hundred milliliters of blood. An examination of the urine disclosed four plus albumin. The blood type was Rh negative O.

The treatment of this patient consisted of magnesium sulphate, paraldehyde sedation, rapid digitalization and intravenously administered glucose solution, vitamins and amino acids.

During the patient's 15 hour stay in the hospital, 1000 cc. of urine were excreted. Until the last half hour the systolic blood pressure ranged between 165 and 210 systolic and the diastolic, 110 and 120 millimeters of mercury. During the last half hour the blood pressure declined to 90, systolic and 50, diastolic. The breathing became more labored and stertorous. Though pressor substances and intratracheal oxygen were administered the patient did not rally. Because the foetal heart was not heard at any time, a post mortem section was not attempted.

Clinical Discussion

Dr. D. F. Kaltreider: The main sign exhibited by this 20 year old pregnant colored female is the convulsive seizure. Although the pregnant female is subject to many causes of convulsions, the commonest of these are eclampsia and epilepsy. Other

causes occasionally seen are chronic nephritis, subarachnoid hemorrhage of the spontaneous type, brain tumor and others. It is our policy to consider any convulsion presented by pregnant women as a sign of eclampsia. The other signs and symptoms presented here contribute to make a clear-cut picture of eclampsia. This does not exclude epilepsy, but epileptics do not usually have hypertension, albuminuria and edema, as this woman had. In addition, the period of coma is not prolonged as in this case. Chronic nephritis is characterized by marked elevation of the blood non-protein nitrogen and casts in the urine.

The neurologic examination is negative except for the coma. For this reason the odds are much in favor of eclampsia as the final diagnosis in this patient. The triad of pre-eclampsia is hypertension, edema and albuminuria. When convulsions are added, the process is then termed eclampsia.

It is indeed unfortunate that this patient received no prenatal care. It can be safely stated that all eclampsia can be prevented. If one were to study all cases, an error of management or failure on the part of the patient to seek help soon enough may be found to be responsible for its development. If adequate medical care had been given at any stage prior to the actual convulsive seizure, there would have been an excellent chance of saving this patient's life. The earlier in the disease the treatment is started, the greater the chances of preventing convulsions. Generally, this consists in salt-poor diet, hospitalization, bed rest, sedatives, anti-hypertensive drugs, careful supervision of the electrolyte and fluid balance, constant observation and finally, but not least, interruption of pregnancy. The beginning of the disease in this patient is not known, either as to time or type of onset. It may be postulated that several days prior to the convulsive seizures, there was an excessive weight gain. This was followed by an increase in blood pressure above the normal for this individual. Edema and albuminuria followed. As symptoms prodromal to the convulsive seizure, there was nausea and vomiting and by inference (the empty Bromo-Seltzer bottle) a severe headache.

There are several modes of death in patients with eclampsia. These will not be discussed necessarily in the order of their frequency. Heart failure is common. This was recognized as a possibility since the patient was rapidly digitalized. The heart failure is detected or suspected by a steady increase in the pulse rate, and the rapid filling of the lungs with edema fluid. This type of death is unlikely in this patient since there was no evidence of pulmonary edema. The heart and lungs were normal to the usual methods of examination.

Renal failure is a second cause of death. The mode of failure in many respects, both clinically and pathologically, resembles that of lower nephron nephrosis. It may be noted that the output of the urine during the 15 hours of hospitalization was 1000 cc., and the blood urea nitrogen and CO₂ combining power were within normal limits. This mode of death is not so rapid. The process continues over a period of days, not hours, and is not preceded by coma.

Before considering the last means of death, let us examine one interesting blood finding. That is the 95 per cent hemoglobin. Normally during pregnancy, the hemoglobin concentration in the Negroid race is about 75-80 per cent. An increase of hemoglobin probably indicates hemoconcentration, which is an unfavorable prognostic sign in eclampsia.

Finally, intracranial hemorrhage or hemorrhage into the fluid system may be the cause of death. When this occurs, it is accompanied by continuing and deepening coma. Almost invariably death ensues. Recovery from cerebral hemorrhage when associated with eclampsia is indeed uncommon.

It is suspected that cerebral hemorrhage was the cause of death in this patient.

The following findings would be expected at autopsy: Intracranial hemorrhage; periportal hepatic necrosis and hemorrhage and lower nephron nephrosis.

Pathologic Discussion

The post mortem examiner found evidence of hemorrhage in the nose and mouth. The heart was moderately hypertrophied and cardiac failure was evinced by pulmonary edema and focal hemorrhages in the lung parenchyma. The liver, weighing 1600 grams, was marked by numerous periportal hemorrhages. There was no cirrhosis or evidence of hepatic cell regeneration. The kidneys were swollen to weigh 250 gm. each. The glomerular capsules and tubules contained eosinophilic, acellular material. The uterus contained a foetus (1500 gm.) in LOA position. The cord was wrapped around the foetus's neck. The foetal brain convolutions were flattened and covered by a tense dura. Subarachnoid hemorrhage appeared widespread, but heavier deposits of clotted blood were seen over the right Sylvian fissure, the left cerebral hemisphere and the cerebellar hemispheres. The cisterna magna and fourth ventricle contained fresh blood. Sectioning of the brain disclosed extensive intracortical and intraventricular hemorrhage.

Anatomic Diagnosis

Intrauterine pregnancy (35 weeks); periportal hepatic necrosis, hemorrhagic (eclampsia); acute tubular degeneration, kidneys; intracerebral hemorrhage, right frontal lobe, right occipital lobe, right temporal lobe; subarachnoid hemorrhage; intraventricular hemorrhage.

AN OBSTETRICAL CASE REPORT

The patient is a 42 year old colored, registered, Rh positive, STS negative, para 7-1-0-9. She was admitted to the hospital at 11:30 P.M. on January 10, 1955, in the 38th week of her 9th pregnancy because of severe abdominal pain and fainting, with the onset one hour before admission.

The family history is non-contributory except that the patient's mother died of hemorrhage in childbirth with her 6th baby.

The patient had had no pertinent illness. In 1952, 5 months following her last delivery, she had had two large uterine fibroids removed at the University of Maryland hospital. The uterine cavity was not entered during the surgical procedure and the post-operative course was afebrile and uneventful.

In the interval between surgery and the present pregnancy, the patient had noted that her menses were irregular, varying from 26 to 55 days, with the flow less free than usual.

Previous pregnancies were spaced from 1936 to 1952 and were normal except for the last trimester hypertension with her twin pregnancy in 1946. The fetal weights varied from a 2350 gram twin to a 4300 gram infant at the 1952 delivery. All labors had been less than 5 hours and all children were delivered vaginally. The puerperal periods had all been normal.

The patient's last normal menstrual period was April 17, 1954 and due date was January 24, 1955. The initial examination was significant in disclosing an orange-sized sessile fundal fibroid which was tender to touch.

During the table examination performed on November 2, it was thought by the examiner that the uterus was much larger than the calculated period of gestation warranted. However, a flat plate of the abdomen revealed a single, normal, fetus lying in an oblique presentation, the head in the right iliac fossa.

At about 10:30 P.M. on January 10, the patient had been reading in bed. She turned and reached over her head to turn out a reading lamp and as she did so, was suddenly seized with excruciating left upper quadrant pain. She became quite weak and sweaty and felt faint. Her husband was aroused who aided her to sit up. She then fainted for approximately one minute. On reviving, the pain continued and her husband telephoned the hospital. An ambulance was dispatched to the home immediately.

Upon arrival at the hospital, the patient was admitted directly to the delivery suite. She was in shock, alert, and complaining bitterly of constant left upper abdominal pain. Her blood pressure was noted as 86 systolic over 40 diastolic, pulse 136, and the skin was cold and moist. Blood was obtained for cross-matching and the hemoglobin reported as 8 grams. The chest was clear except for a tachycardia. The uterus was soft, not tender, and no contractions were noted. The fetus was presenting as an LOT, head dipping into the pelvis, the fetal heart was heard in the left lower quadrant at a rate of 148.

There was no external bleeding. The overdistended uterus permitted no satis-

* From The Department of Obstetrics, University of Maryland, Baltimore.

factory determination of any intra-abdominal mass. There was a dull percussion note over both flanks and they were somewhat tender. There was a positive Murphy's sign on the left. Both the resident and the consulting obstetrician who were on the floor at the time of admission felt that this patient had had an acute, massive, intra-abdominal hemorrhage, possibly from the rupture of a myomectomy scar or an aneurysmal rupture retroperitoneally. It was decided that an immediate laparotomy was indicated as soon as preparations were complete and blood available for massive transfusion. The first two units of blood were running under pressure at 12:10 A.M. The blood pressure immediately rose to 110 systolic over 60 diastolic and the pulse dropped to 106.

Under cyclopropane anesthesia, the abdomen was opened and about 1500 cc. of liquid and clotted blood removed. The uterus was intact. A rapid laparotrachelotomy was performed and a full-term, living, male child, weight 4550 grams, was delivered at 12:26 A.M. on January 11th. The placenta was manually removed and no sign of abruptio noted. The uterus was rapidly repaired and the pelvic field cleared of free blood. Blood continued to well into the pelvis from the left upper abdomen. The incision was extended upward. On exploration, a ruptured spleen was found, the pedicle of which was clamped, ligated, and the splenectomy completed. A prompt response to the anti-shock therapy followed. The abdomen was closed in the routine manner. The patient received a total of 9 units of whole blood and left the operating room in good condition, with a blood pressure of 134 systolic over 90 diastolic, pulse 88. After an uneventful recovery the mother and baby were discharged in good condition on the 7th post-operative day. Sterilization was refused.

Discussion: This complication associated with pregnancy is not common. However, it does stress the fact that the pregnant woman is subject to all the medical and surgical problems that may be found in any female.

There are two occasions under which a spleen may rupture during pregnancy. One was described in this patient, that is, a sudden movement on the part of the patient; or an injury to the abdomen. It may also occur during a period of puerperal infection, particularly, when associated with a somewhat prolonged septicemia.

The diagnosis was made at the time of operation. The tentative diagnosis of rupture of a previous myomectomy scar was incorrect. However, there was sufficient evidence for an acute surgical abdomen, particularly, the evidence of intraperitoneal hemorrhage, to warrant laparotomy.

ATTENTION ALUMNI

As we go to press, plans are taking shape to have a representative of the Medical Alumni Association on hand during the A.M.A. meeting in Atlantic City, June 6-10, 1955.

A registration booth will be a feature, prominently and conveniently located where all Alumni are urged to report and register. The plans include a cocktail party preceding a dinner to be arranged for Alumni and their ladies. Your Alumni Association is conscious of its responsibilities and anxious to promote better relations, develop increased strength and merit confidence, loyalty and support. These plans will launch an initial step in a direction to be determined by the Atlantic City trial. The verdict rests with you.

MEDICAL ALUMNI DINE ON OCCASION OF A.M.A. WINTER SESSION

Successful Dinner and Reunion Held at San Souci Hotel in Miami Beach

Under the capable leadership of Dr. Daniel O. Hammond, class of 1945, some 30 members of the Medical Alumni Association including local alumni and those attending the American Medical Association Clinical Session attended the Sans Souci Hotel on the evening of December 1, 1954.

After an informal dinner the various guests arose and introduced themselves. A greeting from the Medical Alumni Association was given those present by Dr. Louis H. Douglass, Professor of Obstetrics and Chairman of the Board of Directors of the Medical Alumni Association.

Those present included Dr. and Mrs. Lee W. Elgin, Sr. of Miami, Florida, Dr. Oliver Winslow of Miami, Florida, Dr. and Mrs. William Guthrie of Huntington, W. Va., Dr. and Mrs. Littleton Bunch of Alamosa, Col., Dr. and Mrs. Morton Hammond of Miami Beach, Fla., Dr. and Mrs. Stanley Schwartz of Miami Beach, Fla., Dr. Howard M. Bubert of Baltimore, Dr. James A. Vaughn of South Miami, Fla., Dr. Phyllis Vaughn of South Miami, Fla., Dr. and Mrs. Albert B. Kump of Bridgeton, N. J., Dr. and Mrs. Frank J. Holroyd of Princeton, W. Va., Dr. and Mrs. Samuel Aronovitz of Miami, Fla., Dr. Taylor Lewis of Miami, Fla., Dr. John A. Wagner of Baltimore, Dr. Richard Schindler of Baltimore, Dr. William H. Hatfield of Knoxville, Tenn., Dr. Elias Freidus of Miami Beach, Fla., Dr. Mortimer Abrashkin of Miami Beach, Fla., Dr. and Mrs. Reuben Rochkind of Miami, Fla., Dr. and Mrs. Daniel Stone of Miami Beach, Fla., Dr. and Mrs. Murray Reckson of Miami Beach, Fla., Dr. and Mrs. Joseph Scott of Miami, Fla., Dr. Theodore Kardash of Baltimore, Dr. Louis H. Douglass of Baltimore, Dr. and Mrs. Daniel O. Hammond of Miami, Fla.

ALUMNI DAY TO FEATURE DINNER DANCE

In addition to the scientific session (summarized elsewhere) visiting Medical Alumni will share not only in the usual annual banquet but in a dinner dance which will be in honor of the class of 1955. The return to the former custom of a dinner dance has been decided upon by the Board of Directors particularly with the view of stimulating further attendance by both Medical Alumni and the younger graduates and for the purpose of further fostering the development of mutual associations in the Medical Alumni group.

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EDITORIAL

CIGARETTES AND LUNG CANCER

About 20 years ago it became evident that cancer of the lung was increasing in frequency. There was considerable argument at first whether the increase was real or only apparent, as a result of better methods of diagnosis and an aging population. It took almost a decade to accumulate the evidence proving beyond a reasonable doubt that the increase was real, but that it affected males more frequently than females. For at least 30 years tobacco smoking had been listed as one of the possible etiologic agents in lung cancer. Articles appeared in both medical and lay press every few years indicting cigarettes particularly, but including industrial smoke, oil and gasoline fumes, road tars and other pulmonary irritants as potential causes. An almost equal number of articles, however, claimed to show that tobacco smoking was blameless; even harmless. The press and air waves continued to urge cigarettes upon their audiences, with such words as "mild", "harmless", "best for you" and even the famous slogan "not a cough in a carload." One of the greatest debates in the medical history of this century raged for several years and it was not until early in the nineteen-fifties that sufficient evidence was available for a logical decision.

There was a natural hesitation in accusing cigarettes and attacking the tobacco industry as contributors to such an alarming and dramatic disease as lung cancer. Not only was cigarette smoking a very firmly established habit in the country at large but the industry also afforded a tremendous revenue to government in the form of taxes and occupation or income to millions of wage earners. Furthermore, cigarette smoking gave a tremendous amount of pleasure, solace and comfort to millions of people every day in the year. In estimating the quantity of sensual pleasure afforded our adult population in civilized countries, deliberately omitting the aesthetic delights, it seemed quite definite that cigarette smoking gave more manhours of pleasure to more people over a longer period of time than could be obtained in any of the other three methods of carnal or bodily pleasure. They are, of course, the eating of food for pleasure, the drinking of alcoholic beverages, and the pleasures obtained in what is now often called the Kinsey area.

But the decision nevertheless went against the cigarettes when evidence such as that accumulated by Wynder and Graham, Ochsner, Doll and Hill in England and many others was carefully weighed, analyzed and critically evaluated. The inevitable

conclusion was reached that heavy smoking of cigarettes for a considerable period of time had something to do with the increase in cancer of the lung, particularly in males. These deductions, however, were based on what might be called retrospective analyses, that is a study of the smoking habits of people who had developed or died of lung cancer as compared to a similar sample of people without evidence of lung cancer. The conclusions were justified by the evidence but there was still a possibility that the sampling was wrong or that other unknown factors played an important role in causation. This doubt was completely dissipated when Hammond and Horn in the summer of 1954 made their preliminary report on the causes of death in a group of 187,766 men between 50 and 70 years of age, followed for 2½ years, whose smoking habits were documented. The plan was for a five-year study but the results seemed so significant that they felt obligated to release their findings halfway through the study.

Hammond and Horn found that there was an increase of 52 per cent in deaths in "regular" cigarette smokers beyond that expected, and that the death rates increased with the amount of smoking. A pack or more a day caused a 75 per cent increase in the death rate. Deaths due to coronary disease accounted for 56 per cent of the increase, while cancer caused 26 per cent of the increase. Cancer of the lung was "much higher among the regular cigarette smokers than in non-smokers", verifying the findings from the "retrospective" analyses. Thus the evidence of an association between cigarette smoking and lung cancer is so strong that it should be considered as proof within the everyday meaning of the word.

The next question is what we as physicians can do about it. There are many and varied reactions to this challenge. Many physicians, especially those still smoking cigarettes, feel that nothing can really be done about it, and that in their own cases it is probably too late to stop as the damage, if any, has probably already been done. Others at the opposite end of the spectrum are fired with missionary zeal and advocate converting everyone to their radical viewpoint of abolition of all cigarette smoking. Those in the middle-of-the-road group say that there are quite a few things which can reasonably be advocated, some with good hope of success.

First, strong support for the groups of scientists and investigators attempting to isolate the carcinogenic agents in cigarettes.

Second, reasonable statements to our lay public telling them of our conviction that regular cigarette smoking is injurious to health, and that the damage to the coronaries, heart or lungs increases proportionately to the quantity of cigarettes smoked.

Third, we should personally recommend, especially to our friends, that they should stop smoking cigarettes.

Fourth, we should insist that it is never too late to stop, as unpublished figures from Dr. Lombard of the Massachusetts Department of Public Health, seem to show that giving up cigarettes even after heavy smoking for 30 years will cut the incidence of lung cancer in half.

Fifth, if our friend or patient suffers from real addiction, as many do, he should be urged to switch to cigars or a pipe, where the risk is considerably less. "Cutting down" on quantity is rarely satisfactory, as it is usually not permanent. The various

filters, as far as we know at present, are not satisfactory preventives. A really efficient filter prevents satisfactory smoking.

Sixth, and most important of all, we should urge our young people of high school and college age not to start smoking, or if they have already commenced, to stop before reaching the stage of addiction.

Finally, if the research teams succeed in identifying the carcinogenic agent in cigarettes, and the manufacturers succeed in removing it without destroying the soul-satisfying taste, then we should consult the psychiatrists before resuming the habit, to find out why we smoke anyway! Unofficial opinions received from several psychiatrists to date (between puffs) are to the effect that smoking cigarettes can be only a habit, or a real addiction or at times even a vice. In general it is considered a regressive trait, but a socially acceptable one, which allows the psychiatrists to smoke without feeling the guilt complex. On the whole it is a way of softening the blows of painful reality. It is too bad that such a pleasant habit has such base potentialities as early death from coronary disease or cancer of the lung. It is a real test of character to meet the challenge and give up the habit.

Merrill C. Sosman, M.D.

11 February, 1955.

(Special Article)

ANTI-TUBERCULOSIS DRUGS AND BCG

LAWRENCE M. SERRA, M.D.

Antimicrobial therapy, initiated by the discovery of Streptomycin about 10 years ago, has reduced the period of incapacitation and the mortality rate of tuberculosis to such an extent that the need for sanatoriums has diminished, to wit, the recent closing of Trudeau Sanatorium. There are now three (3) major drugs available—streptomycin, dihydrostreptomycin and isonicotinic acid hydrazide. Each is capable of bacteriostatic effect, permitting the innate defenses of the body to halt or overcome the ravages of the disease. These drugs may exhibit untoward side effects peculiar to each one. The principal side effect of streptomycin is involvement of the vestibular portion of the 8th cranial nerve leading to a peculiar type of dizziness. Dihydrostreptomycin causes involvement of the auditory portion of the 8th nerve produces deafness. Isoniazid, produces peripheral neuritis. These side effects have been largely eliminated by one of the following dosage schedules:

1. One gram of streptomycin or dihydrostreptomycin 2-3 times a week,
2. A combination of the 2 drugs, using 0.5 gm. of each, 2-3 times a week,
3. Isoniazid in the amount of 3-5 mg./Kilo per day.

The recent demonstration by a special culture method of viable organisms in resected specimens of "negative" drug treated cases, has raised the question as to the efficacy of these doses. Frequently, after varying periods of time, treatment with any one of the major drugs results in the emergence of "drug resistant" organisms, so that improvement ceases or the disease progresses in spite of continuing treatment. It is obvious that transmission of the disease by drug resistant organisms could create a serious public health hazard by reverting to the pre-antimicrobial era as far as these new cases would be concerned. Fortunately, the number of previously untreated drug resistant cases is so small as to be negligible.

Para-aminosalicylic acid, a drug with relatively little antituberculosis effect, is capable of delaying or preventing the emergence of drug resistant organisms when administered simultaneously with one of the major drugs. These combinations permit antimicrobial therapy for 18-24 months. The optimum dose of PAS is 3 gms. 4 times a day, but this frequently produces gastro-intestinal disturbances of such magnitude that smaller amounts have to be used. Very recently, potassium paraminosalicylate has been introduced, and is said to be less likely to cause gastro-intestinal disturbances, but it is too soon to pass judgment in this regard. Various combinations of the 3 major drugs and PAS have been tried, and while conflicting reports may be found in the literature, it is generally accepted that the simultaneous administration of isoniazid, streptomycin and/or dihydrostreptomycin and PAS has no greater value than either major drug with PAS.

Pyrazinamide, an analogue of nicotinamide, has proved somewhat effective for a short period of time. Alone, it is of limited value, but when combined with isoniazid, it is reported to be equal to any combination of isoniazid, streptomycin, dihydrostreptomycin and PAS, and in such combination, it may have a special indication in

streptomycin-resistant cases. Its principal side effect, jaundice, is quite rare. Viomycin is only slightly effective alone, but when combined with one of the other drugs, its effectiveness is enhanced and may well be useful in special instances. It is quite toxic and very close supervision is needed.

The choice of the major drug to be used is more or less optional except in tuberculous meningitis and miliary tuberculosis, in which cases, isoniazid is a "must". No case of clinical meningitis has developed during the treatment of miliary tuberculosis with this drug. As regards meningitis, intrathecal therapy has been practically eliminated, as the oral administration of isoniazid can maintain an adequate concentration of the drug in the cerebrospinal fluid. The heretofore 100 per cent mortality of meningitis has been reduced to less than 20 per cent since the introduction of isoniazid; this is half the mortality of streptomycin treated cases.

The matter of drug therapy in cases of recent tuberculin conversion in the absence of clinical disease, is in such a state of obfuscation that it must be relegated to the future for clarification.

The deleterious effect of the steroids on tuberculosis is well documented; however, it is now evident that if administered simultaneously with antituberculosis drugs, the steroids do not affect tuberculosis adversely. Far advanced cases of tuberculosis which have failed to respond to antimicrobial therapy are reported to have improved significantly when steroids were added to the regimen. These observations need further corroboration before acceptance is warranted.

Surgery of tuberculosis under the protecting umbrella of antimicrobial therapy has reached new heights, the pinnacle of which is pulmonary resection.

The Bacille Calmette Guérin vaccination was first tried in man about 30 years ago. Unfortunately, the Lübeck catastrophe, now known to have resulted from an error, all but completely smothered the initial enthusiasm. Several prolific writers in this country have set forth various reasons for not using BCG vaccination. The outstanding ones being, (1) the morbidity and mortality in this country has dropped more than in countries where vaccination is used, (2) in case of infection, the re-infection type of disease occurs instead of the less serious primary affect and (3) the individuals become tuberculin positive, so that tuberculin testing loses its value.

These reasons are easily rendered inconsequential by the degree of protection reported by Aaronson, and from many countries using the vaccination on a large scale. The remarkably few deaths attributed to BCG, realizing that over 50,000,000 people have been vaccinated, attests its safety. It should be employed only in tuberculin negative individuals. The degree or duration of protection cannot be predicted. The American Trudeau Society recommends injection in individuals subjected to more than average exposure to tuberculosis. The use of the BCG vaccination in this country is increasing, and under the guidance of the World Health Organization (WHO) and the United Nation's Children's Fund, (UNICEF) is being extended to many countries.

THE USE OF 9-ALPHA-FLUOROHYDROCORTISONE IN THE THERAPY OF DERMATOSES

HARRY M. ROBINSON, JR., M.D., RAYMOND C. V. ROBINSON, M.D.
AND MORRIS M. COHEN, M.D.

In earlier reports, Robinson and his associates (1, 2) discussed the value of local steroid therapy in the treatment of selected dermatoses. Hydrocortisone, in oily base ointments, greaseless base creams and in lotions proved to be an adjunct in the local management of contact dermatitis, various forms of eczema, pruritus ani, and pruritus vulvae, and stasis dermatitis. The authors stressed the fact that relief from symptoms was temporary and in most instance relapses occurred when local applications of the steroids were discontinued. These drugs do not replace the present methods of therapeutic management of the aforementioned conditions but are supplementary measures employed to obtain more rapid relief from distressing local symptoms. No adverse reactions were encountered in their original studies which could be attributed to absorption of hydrocortisone from the skin surface. During the past year numerous modifications of the cortisone nucleus have been subjected to laboratory and clinical research. Some of the compounds have no therapeutic value, and others are too toxic for human consumption. One of these new products, 9-alpha-fluorohydrocortisone, reported by Fried and Sabo (3), was made by the insertion of a fluorine atom at the 9-alpha position of hydrocortisone acetate. Early studies by Witten, et al. (4), and Robinson (5) indicated that 0.1 per cent to 0.25 per cent 9-alpha-fluorohydrocortisone in lotion or ointment bases had the same therapeutic efficiency attributed to 1.0 per cent or 2.5 per cent hydrocortisone prepared in the same vehicles.

THE STUDY

Preparations used: 9-alpha-fluorohydrocortisone was prepared in bases consisting of petrolatum and mineral oil, plasticized hydrocarbon gel, carbowaxes and oil in water emulsion lotion base. Concentrations of 0.05, 0.1, 0.2, 0.25 and 0.5 per cent were used in the treatment of a second series of patients. Neomycin plus the steroid in concentrations of 0.1 per cent and 0.2 per cent in the lotion base was used in the treatment of a third series of patients.

Paired comparison studies: These studies were conducted on hospitalized patients by members of the house staff under the supervision of the authors. The 30 patients treated in this manner had generalized atopic dermatitis (neurodermatitis). Four or more preparations were labelled by number and furnished as unknowns to the house officer who supervised the local applications to various parts of the body and in

From the Division of Dermatology, Department of Medicine, School of Medicine, University of Maryland and Division of Dermatology, Boggs Medical Service, Baltimore City Hospital. This study was supported by Grants-in-aid from the Upjohn Co., and the Sharp and Dohme Co., and the Squibb Institute for Medical Research (B. C. H.). The materials used in this study were furnished by the Merck Co., Sharp and Dohme Co., The Upjohn Co., and The Squibb Institute. The authors are indebted to Dr. Robert Singleton and Dr. R. J. Dowell of the medical service for their aid in conducting this study.

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company with one of the authors observed the effects. The results of this study indicated the superiority of one base over another, and optimum concentration of the steroid.

Patient selection: The 1067 patients treated in this investigation included private patients, hospitalized cases, and out-patients. Age, race and sex had no effect on the results of treatment with these preparations and therefore these divisions are not included in the charts.

Absorption study: Livingood, and his associates (6) reported that percutaneous absorption of 9-alpha-fluorohydrocortisone may occur following the topical application of the drug, and that if the quantity absorbed is sufficient, sodium retention may occur, manifested by decreased urinary sodium excretion, weight gain, and/or edema. In view of this, absorption studies were performed on 3 hospitalized patients by deliberately applying a lotion base containing 36 mgm of the steroid to the body in a 48 hour period. The results were carefully recorded, after control readings had been obtained.

RESULTS

Paired comparison studies on 30 patients indicated that 9-alpha-fluorohydrocortisone was effective on topical application in the treatment of the same dermatoses which responded to treatment with hydrocortisone ointment or lotion. The ointment or lotion containing 0.1 per cent 9-alpha-hydrocortisone had the same beneficial effect as the similar base containing 1.0 per cent hydrocortisone. It is quite obvious from the results of this study that the difference in action between the application of hydrocortisone and fluorohydrocortisone is quantitative and not qualitative. The results of these paired comparison studies also indicate that in 15 per cent of the patients hydrocortisone has the more beneficial action, and in 15 per cent fluorohydrocortisone is superior, but in the remainder no difference in action is noted. This method of analysis in these 30 patients established the fact that a concentration of greater than 0.2 per cent of the steroid in the local preparation was unnecessary. The 0.5 per cent preparation did not produce superior results to ointment or lotion containing 0.2 per cent of the active ingredient. The lotion bases and the plasticized petrolatum proved to be superior vehicles for dispensing the steroid. By this method

TABLE I
0.1 per cent 9-alpha-fluorohydrocortisone

Condition	No. Patients	Plasticbase				Oily Ointment				Lotion			
		I.	P.I.	U.	R.	I.	P.I.	U.	R.	I.	P.I.	U.	R.
Atopic dermatitis.....	181	60	2	4	2	30	3	5		58	4	13	0
Contact dermatitis.....	143	51	0	5	0	49	8	2	2	22	2	2	0
Seborrheic dermatitis.....	43	15	0	3	0	10	3	1	1	7	1	2	
Pruritus ani.....	30	10	0	4	1	8	3			3		1	
Pruritus vulvae.....	28	5	0	1	0	6	3	1		9	1	2	
Sunburn.....	8									8			
Stasis dermatitis.....	23					12	1	2		6	1	1	0
Intertrigo.....	10					2	2	2		4			

Key: I. Improved; P.I. Partially improved; U. Unimproved; R. Reaction.

of study it was determined that a concentration of less than 0.1 per cent of fluoro-hydrocortisone was relatively ineffective. Forty patients treated with bases containing 0.05 per cent of the steroid obtained relatively poor results. Thirteen of 15 patients with atopic dermatitis treated with 0.05 per cent of the steroid in plasticized petrolatum obtained a good result. The results of this study indicate that the optimum concentration of the active ingredient is 0.1 per cent.

Four hundred and sixty patients with dermatoses who proved responsive to local treatment with hydrocortisone, were treated with ointments and lotions containing

TABLE II
0.2 per cent and 0.25 per cent 9- α -fluorohydrocortisone

Condition	No. Patients	Plasticized Hydrocarbon				Oily Ointment				Lotion			
		I.	P.I.	U.	R.	I.	P.I.	U.	R.	I.	P.I.	U.	R.
Atopic dermatitis.....	194	39	0	2	1	69	6	7	1	58	16	12	0
Contact dermatitis.....	131	20	0	3	0	37	9	2	2	49	2	5	2
Seborrheic dermatitis.....	58	8	0	0	0	22	4	2	2	16	2	2	
Pruritus ani.....	33	9	0	1	0	12	3	2		4	0	2	
Pruritus vulvae.....	29	3				8	2	1	1	10	2	2	
Stasis dermatitis.....	25	2				5	2	3	1	9	1	1	1
Intertrigo.....	13					2	1	1		9			

Key: I. Improved; P.I. Partially improved; U. Unimproved; R. Reaction.

TABLE III
Absorption Study
36 mgm of drug applied to skin in 48 hour period

	Control	24 Hr.	72 Hr.
Urine sodium excretion.....	8.7	8.2	9.2
Total eosinophil count.....	210/cmm	122/cmm	178/cmm
Serum chlorides.....	370 mgm per cent	376 mgm per cent	368 mgm per cent
Serum sodium.....	140 m.e.	152 m.e.	151.5 m.e.
Serum potassium.....	4.1 mgm per cent	3.7 mgm per cent	4.8 mgm per cent
Weight.....	144	144.5	143.75
Total urine output.....	730 cc	550 cc	650 cc

TABLE IV
Conditions Not Benefitted

Conditions	No. Patients
Lichen planus.....	4
Psoriasis.....	5
Epidermophytosis.....	5
Trichophytosis corporis.....	2
Pityriasis rosea.....	3
Pustular bacterid.....	6
Herpes simplex.....	4
Chronic discoid lupus erythematosus.....	4

0.1 per cent fluorohydrocortisone (table I). The preparations proved to be effective in the treatment of atopic dermatitis, contact dermatitis, seborrheic dermatitis, pruritus ani, pruritus vulvae, stasis dermatitis, sunburn, and intertrigo. The lotion proved to be the most effective preparation for the treatment of intertrigo, and sunburn. Four hundred and eighty three patients (table II) were treated with lotions and ointments containing 0.2 per cent and 0.25 per cent of the steroid. The results of the treatment of these two groups of patients were identical and therefore were compiled on one chart. The results demonstrated in this section of the study strengthens the original statement that a concentration of greater than 0.1 per cent of the steroid in a suitable base is unnecessary.

Studies performed on 3 patients are indicative of percutaneous absorption of 9-alpha-fluorohydrocortisone when applied to the crural areas in lotion bases. The results of observations on one such patient deliberately treated with 36 mgm of the steroid in lotion base in a 48 hour period are recorded in table III.

Sixty eight patients were treated with an ointment or lotion containing either neomycin or neomycin and bacitracin in combination with 9-alpha-fluorohydrocortisone. The addition of the antibiotic did not alter the effect of the steroid and had the additional beneficial effect of combatting secondary pyogenic infection. The steroid did not inhibit the action of the antibiotic.

Many dermatoses do not respond to local steroid therapy (table IV). All adverse reactions noted in charts 1, 2, and 3 resulted from local primary irritation by the bases used.

CONCLUSIONS

1. The results of this study in 1067 patients indicates that 9-alpha-fluorohydrocortisone in a concentration of 0.1 per cent prepared in lotion or ointment bases produces an adequate therapeutic response in selected dermatoses.
2. These preparations of steroids for local use produce temporary remission of subjective symptoms in atopic dermatitis, contact dermatitis, pruritus ani, pruritus vulvae, and seborrheic dermatitis. The lotion preparations are excellent for the treatment of sunburn, and intertrigo.
3. Absorption studies indicate percutaneous absorption of 9-alpha-fluorohydrocortisone may occur with some interference with electrolyte balance.

BIBLIOGRAPHY

1. ROBINSON, HARRY M., JR., ROBINSON, R. C. V.: Treatment of dermatoses with local application of hydrocortisone acetate. *J. A. M. A.* **155**: 1213-1216, July 1954.
2. ROBINSON, HARRY M. JR., ROBINSON, R. C. V., STRAHAN, JACK: Indication for local hydrocortisone therapy, **83**: 227-237 *Medical Times*, Mar. 1955.
3. FRIED, J., & SABO, E. F.: 9-alpha-fluoro derivatives of cortisone and hydrocortisone, *J. Am. Chem. Soc.* **76**: 1455, 1954.
4. WITTEN, V. H., SULZBERGER, M. B., ZIMMERMAN, E. H., & SHAPIRO, A. J.: A therapeutic assay of topically applied 9-alpha-fluorohydrocortisone in selected dermatoses. *J. Invest. Dermat.* **24**: 1, 1955.
5. ROBINSON, R. C. V.: Use of 9-alpha-fluorohydrocortisone in dermatoses. *J. A. M. A.* **157**: 1300 (Apr. 9), 1955.
6. LIVINGOOD, CLARENCE S., HILDEBRAND, JAMES F., KEY, JAMES S., AND SMITH, RICHMOND, W. JR.: Studies on the percutaneous absorption of 9-alpha-fluorohydrocortisone. *A.M.A. Arch. Derm.* in press.

CORTISONE THERAPY FOR PRURITIC PITYRIASIS ROSEA

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It is now well recognized that cortisone, hydrocortisone and corticotropin are helpful agents in the treatment of some acute and chronic skin diseases. Sulzberger and associates (1) have reported these drugs to be particularly valuable in the management of selected cases of contact dermatitis, atopic dermatitis, exfoliative dermatitis, systemic lupus erythematosus, pemphigus, multiform erythemas, nummular eczema, psoriasis and others.

Pityriasis rosea is an acute or subacute dermatosis of unknown etiology which usually has easily recognizable features such as the morphology of the lesions, the distribution of lesions, varied symptomatology and limited duration. Usually there is little or no pruritus and treatment consists of reassurance and at times the application of mild anti-pruritic topical preparations and/or ultra-violet light therapy. Sometimes, however the itching may be severe as in the papular or urticarial varieties. In some instances, topical anti-pruritic preparations, sedation, antihistaminic drugs, ultra-violet light and roentgen ray therapy have been used with varying results.

Recently we observed 3 patients with severely pruritic pityriasis rosea whose pruritus failed to respond under conventional therapy but who experienced remarkable improvement following cortisone and hydrocortisone administration.

CASE REPORTS

Case 1. A.S., 29 year old white married female, was first seen November 14, 1953 for a pruritic eruption. The herald spot had appeared on the left forearm 12 days previously and 10 days prior to examination the rash had spread over the torso and extremities. Pruritus was so severe that she had had no rest or sleep for 3 days despite treatment with starch baths and peroral antihistaminic drugs.

On examination a 2 cm. annular scaly pink papular lesion was seen on the volar surface of the left forearm. There were innumerable rather symmetrically distributed oval reddish scaly papules on the chest, abdomen, back, forearms, arms and thighs. A diagnosis of pityriasis rosea was made. Therapy consisted of phenol 2 per cent in lubriderm applied topically and cortisone 200 mgms. daily. After 4 days the eruption showed no objective change but the patient reported complete relief of itching beginning about 72 hours after initiation of the medication. Subsequent cortisone dosage was reduced to 150 mgms. daily. One week later, the rash had completely disappeared, there had been no return of pruritus and the dosage of cortisone was gradually reduced.

Case 2. E.B., 28 year old white married female, was seen because of a pruritic eruption May 26, 1954. Seven days prior to examination the eruption had appeared on the neck and had subsequently spread to the trunk and upper extremities. Itching was sufficiently severe to cause insomnia for 4 nights. Several kinds of topical therapy and peroral antihistaminic drugs had been administered without benefit.

Examination disclosed innumerable erythematous scaly papules 0.2 to 1.0 cm. in diameter on the face, neck, forearms, arms, chest, breasts, abdomen, thighs and buttocks. Some lesions were oval with the long axes in the lines of cleavage. A diagnosis of pityriasis rosea was made. Phenol 2 per cent in lubriderm was applied to the skin and cortisone 150 mgms. was prescribed because of the intensity

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of her symptoms. In 3 days there was definite decrease of pruritus and the eruption was less erythematous. In 5 days the itching had ceased and the eruption was receding. Cortisone was gradually decreased and on June 16, 1954 the rash had completely disappeared.

Case 3. L.M., 22 year old white married female, was seen June 17, 1954 because of an eruption which was mildly pruritic. She was a secundigravida with expected date of delivery October 30, 1954. Several weeks prior to her initial visit, a lesion had appeared on the right side of the neck and more recently other lesions had appeared on the axillae, chest, breasts and upper extremities. Prior therapy consisted of caladryl lotion and sodium bicarbonate compresses.

Approximately 20 maculopapular lesions were observed on the neck, chest, breasts, upper abdomen, axillary folds, arms and forearms. They were pinkish, centrally scaly and oval with long axes in lines of cleavage. A diagnosis of pityriasis rosea was made, the patient was reassured as to the benign self-limited nature of the dermatosis and topical phenol 2 per cent in lubriderm was prescribed. Seven days later, the lesions were more extensive with intense pruritus preventing sleep. When hydrocortisone 120 mgms. daily was prescribed the pruritus abated within 24 hours. The dose was reduced gradually without recurrence of pruritus.

DISCUSSION

Though as a rule, minimal treatment is recommended for patients with pityriasis rosea, at times the associated pruritus is severe enough to warrant therapy. Topical antipruritic agents, ultra-violet light, roentgen-ray therapy and antihistaminic drugs have been employed with inconsistent results. Because of the remarkably beneficial results observed in the 3 reported cases of severely pruritic pityriasis rosea, it is recommended that cortisone or hydrocortisone be employed for relief of itching in properly selected cases of pityriasis rosea. This dermatosis should be added to the list of those skin diseases for which corticoids are at times indicated.

SUMMARY

1. Three patients with pityriasis rosea were remarkably relieved of severe pruritus by the administration of cortisone or hydrocortisone.
2. These drugs are indicated for the relief of severe pruritus in properly selected cases of pityriasis rosea.

BIBLIOGRAPHY

1. a. SULZBERGER, M. B. AND BAER, R. L.: Present Status of ACTH, Cortisone and Compound F in Dermatologic Management. Yearbook of Dermatology and Syphilology 1952, pp. 7-21, The Year Book Publishers Inc., Chicago 1953.
2. b. SULZBERGER, M. B. AND WITTEN, V. H.: Prolonged therapy with cortisone for chronic skin diseases. J.A.M.A. **155**: 954-959, 1954.

THE LAURENCE-MOON-BIEDL SYNDROME*

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We have recently encountered four siblings in each of whom one or more components of the Laurence-Moon-Biedl syndrome are present. An inquiry into the family history (fig. 1) disclosed blindness in a maternal aunt, migrainous headaches in the twin sister of the latter, and a maternal uncle who was presumed to have died of a brain tumor.

Surprisingly few of the more than 200 reports of this condition have emanated from North America. In order to again call attention to this rather rare entity, the following cases are reported along with a brief review of the literature.

REPORT OF CASES

Case 1. M. C., male, was born on November 6, 1920, and had supernumerary fingers and toes at birth. Birth and early development were normal. He began to walk and talk at the usual ages. He started school at the age of 6 years, showed relatively little interest in his studies, made barely passing grades, but did complete high school. He had begun wearing glasses before entering high school. Immediately after leaving school he obtained a job with a Chicago printing company, operating a book-binding machine. He has now worked at this job for approximately 15 years, is very interested in and well satisfied with his job, and for a period of 7 to 8 years did not miss one day from work. When the family moved to a farm in Wisconsin in 1945 he remained behind in Chicago and was married that same year. His wife was a young Bohemian girl of rather labile emotions who refused to move into the apartment which her husband had provided and insisted upon their living with her mother, a domineering person. Since both he and his wife were selfish and demanding, the marriage was plagued by frequent arguments, and culminated in separation one year ago followed by divorce.

The company for which he works bought him glasses with telescopic lenses about a year ago which he uses for reading. He attends athletic events occasionally and movies frequently. An interest in roller skating developed about eight years ago and he now belongs to a roller skating club which travels a good deal about the country.

Case 2. R. C., white male, was born on July 12, 1924. Birth and early development were normal; he learned to walk, talk, and was toilet trained at the average age. A supernumerary finger was removed from each hand shortly after birth. Past illnesses included chickenpox, scarlet fever, measles, and pertussis. He had a tonsillectomy at the age of 13 years, and at the age of 20 he sustained a mild head injury when he was struck by an automobile. He began school at the age of 6, completed two and one-half years of high school, and was considered a good student. He is said to have been "bull headed" as a child and usually demanded and obtained his own way in anything. The parents attribute this to the fact that they "spoiled" him because of his blindness. It was necessary for him to wear glasses from the time he started school, but the visual difficulty was considered as astigmatism until the age of 10 years when it was noticed that he was night-blind. On November 28, 1941 he was examined by the late Dr. Sanford Gifford, who noted on ophthalmoscopic examination familial macular disease and right retinitis pigmentosa and reported V.A.R. 20/70, V.A.L. 20/100. On April 19, 1944 his vision with glasses was 6/30 in the right eye; 6/30 plus 1 in the left eye. After leaving high school he worked for a printing company for two years and then worked for 9 months as a grocery store clerk. While going to school he attended sight-saving classes, and after high school he studied commercial art. He is said to have learned Braille very rapidly, and was described as a steady worker who saved his money and was always on his good behavior. He has always been in-

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terested in sports, and attended sports events and the movies frequently, even after it was questionable whether he was able to actually see the events.

In 1945 the family moved to a farm in Wisconsin. The patient did not care for the farm. In 1946 he received word from a specialist in Chicago that there was a new treatment which the specialist thought would benefit his eyes. He was very enthused, and went to Chicago, but after an examination he was told that his eyes would not respond to the treatment. Several hours later he was picked up wandering about the streets in a confused condition, throwing stones at children, and was admitted to a psychiatric ward. When his father came to take him home the patient did not recognize his father, and persisted in calling him "fellow." He remained home for about 10 days during which time he was extremely disturbed, combative, and feared that someone was trying to harm him. He was then admitted to a mental hospital on a voluntary basis and remained there for 7 months. During this period he was extremely disturbed and combative, got in a number of fights, sustained several injuries, and never recognized his parents when they came to visit him. Also during this hospitalization he was confused, wandered aimlessly, hallucinating, laughing and talking to himself. Most of his conversation was irrelevant; he showed memory defects, and was disoriented as to time and place. He said that he saw and heard God who told him to be happy; that he heard the devil; and spoke of being controlled by the 7 wonders. He had the delusion of being chased by two boys—Ernie and Joe. Blood pressure was 120 systolic over 90 diastolic. Roentgenograms of the skull showed the sella to be at the upper limit of normal in size and rather deep. Then suddenly in May of 1947 he seemed to "snap out of it." Although the doctors advised continued hospitalization the parents took the patient home in June 1947 at which time they said he appeared "almost normal." Six months later the family moved back to Illinois.

During the summer of 1949 he studied Braille, learned very quickly, and his instructor made arrangements for him to attend a training school for the blind in Chicago. On April 15, 1950, the day of his enrollment in this school, the superintendent noticed that he appeared somewhat confused but did not regard it as being out of the ordinary. Five days later while coming home on the train for the weekend he got off in another town. His parents were called by the police and advised that he was wandering about in a confused state. After they had taken him home he did not seem to realize where he was and they were unable to keep him in bed. He complained of severe headache and wanted to shave and bathe continuously. He mumbled incoherently but several times said: "Did I say that? I didn't mean to say that." During the next two days he became over-polite and constantly wanted to do something to help the family. The informants stated that this was very unusual since the patient was not usually of this disposition.

He was admitted to the Manteno State Hospital on April 23, 1950 at which time he was confused, disoriented, and markedly blocked. He was able to follow simple verbal commands but was frequently abusive to old men on the ward. He seemed unable to answer questions and those questions to which he would respond were answered in barely audible, unintelligible, fragmentary speech. There was usually a long interval between the question and the response. There were fat deposits over the shoulder and pelvic girdles and the genitalia were hypoplastic. Extremities were short and the fingers were short and tapering. There was no hair over the trunk and legs, and there was upward and outward strabismus of the right eye. Pupils were equal but reacted slowly to light, and vision was less than 2/200 bilaterally. An ophthalmoscopic examination disclosed the scattered black deposits described previously. Surgical scars were present on the ulnar aspect of the proximal end of each fifth finger. The second and third digits of each foot were webbed. During July of 1950 he received 18 electric shock treatments, following which he was very much improved. He had an amnesia for the events leading up to and including the first two months of his hospitalization. By September of 1950 he was alert, attentive and cooperative; and answered questions relevantly and coherently. He was discharged from the hospital on September 29, 1950.

Since returning to his home he has shown no evidence of psychiatric disorder.

Case 3. H. C., male, was born on November 19, 1928, and had supernumerary fingers and toes. Birth and early development were normal; he began to walk and talk at the usual ages. He started school at the age of 6 years, began wearing glasses at that time, and stopped going to school after he had completed the 7th grade. While attending school during the summer months he worked as a caddy at the local golf course. Immediately after leaving school he worked for 4 years loading and

unloading coal trucks. He resigned from this job when the family moved to a farm in Wisconsin in 1945, and worked as a farmer along with his father. He has always been considered a hard worker, capable of and even appearing to enjoy heavy laboring work; and his efforts contributed largely toward the success of the farm. When the family returned to Illinois in 1946 he returned with them and obtained employment as a stevedore, loading and unloading trucks of very heavy building materials. Although he earns a sizeable income in his present occupation, he has retained an intense interest in farming. The family still owns the farm in Wisconsin and this patient supervises the work of the tenant farmer and frequently makes purchases of modern farm equipment. He is unmarried and has never shown any interest in members of the opposite sex. Although he occasionally attends athletic events and the movies, he is primarily interested in his work and the farm.

Case 4. D. J. C., female, was born on November 6, 1933, and has shown no polydactyly or syndactyly. Birth and early development were normal; she began to walk and talk at the usual ages. Aside from the usual childhood diseases she has had no serious illnesses or operations. She began school at the age of 6 years, has never failed in any of her scholastic courses, has always been considered an average student, and graduates from high school this year. She did not begin wearing glasses until 3 years ago.

Case 5. L. K., a maternal uncle to Cases 1 to 4, was born in 1887. There were no congenital anomalies and he showed no evidence of nervous or mental disease until his final illness. He died at the age of forty of an illness which his family doctor diagnosed as a brain tumor although there was no surgical or post-mortem confirmation of the existence of such a lesion. He was of average height and body configuration and there was no evidence of endocrinopathy. Vision was described as normal though he did wear glasses during the last decade of his life. After obtaining a high school education he pursued a successful career as a clerk, and was possessed of average intelligence. As may be seen in fig. 1, he was the father of five children.

Case 6. L. R., a maternal aunt to Cases 1 to 4, was born in 1899, the older of a set of twins. After having the usual childhood diseases she suffered from a severe case of "Flu" during the 1918 epidemic. Onset of menses was at 17 years with periods 5 weeks apart, lasting 7 to 8 days with excessive bleeding throughout each menstrual period. Menopause occurred two years ago at the age of fifty-one with only mild flushes. She completed 8 years of schooling, was considered a fair student, and then worked for 32 years as clerk in a grocery store. Vision has always been normal but she has been wearing glasses since the age of 42. There were no congenital anomalies, evidence of mental disease, or endocrinopathy. She is married and the mother of one child.

This lady has suffered from headaches all of her life, much less severe during the past 10 years. The pain is always bitemporal in location and of a shooting throbbing nature. The headaches were

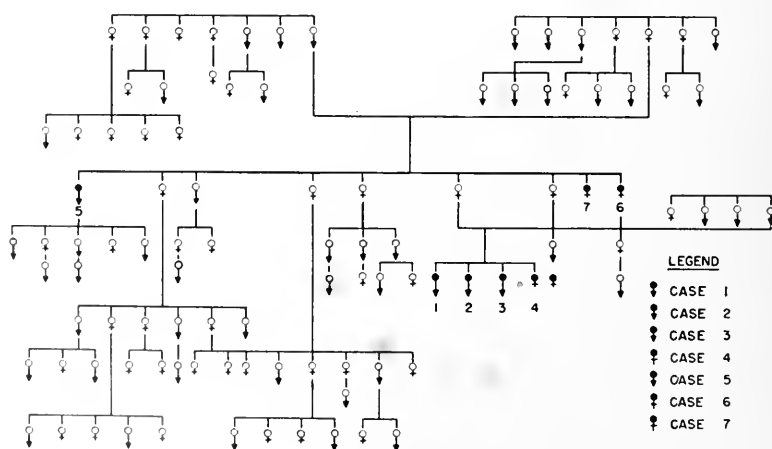


FIG. 1. Genealogic diagram of family C

usually 1 to 2 days in duration—present day and night and preventing her from sleeping—but have on occasion lasted 3 to 4 days. Toward the end of such a period severe vomiting would occur—sometimes lasting an entire day—and then the headache would gradually go away. The headache never seemed to appear when she was busily occupied but whenever she would sleep for an hour or so longer than usual she would invariably awaken with a headache. There were no associated visual symptoms or motor or sensory changes. The onset was never abrupt but usually came on over a period of 15 to 20 minutes. On several occasions between the ages of 20 and 30 she fainted at the onset of such an episode and was unconscious for 2 to 3 minutes. During the past 10 years she has not had a severe headache, has never had one last for as long as 3 days, and she has been able to be unoccupied or oversleep without having a headache. She does not relate this alleviation of symptoms to menopause or diet; or to any social, occupational, or geographic situation.

Case 7. L. K., the twin sister (younger by 45 minutes) to Case 6, is blind. Although as soon as she started to walk it was apparent that vision was markedly impaired, she retained the ability to read newspaper headlines and see people but not to recognize them until the age of 27 years, since which time she has been completely blind. She completed 8 years of schooling by memorizing virtually all of the material. Menarche occurred at 17 years with periods occurring every 28 days, lasting 3 to 4 days, and accompanied by a normal flow and no dysmenorrhea. An operation for uterine fibroids was performed in 1937. She was married 6 years ago. For the past 2 years she has suffered from Glaucoma. There are no congenital anomalies or evidence of mental disease or endocrinopathy.

DISCUSSION

In their original description in 1866 Laurence and Moon (1) reported deep black irregular figures in the fundus oculi associated with hypogenitalism and small stature. They also mentioned obesity and mental deficiency. Since that time the retinal lesions, obesity, mental deficiency, polydactylism or syndactylism, and familial occurrence have come to be recognized as components of the syndrome. With the accumulation of literature on the subject a host of associated abnormalities have been described—neurologic, metabolic, skeletal, and developmental. Among these there have been mentioned: defective hearing (2), deafness (3), deaf-mutism (4, 5), cranial nerve palsies (6), deviation of tongue (3), central facial hemiparesis (7), facial asymmetry (3, 8, 9), blank and rigid facial expression (3), ptosis (3, 8), excessive blinking (10, 11), squint (12), strabismus (2, 3, 7, 13, 14, 15, 16), muscular atony (4, 6, 17, 18), hypotonia (19),* hypoactive reflexes (3), asymmetrical reflexes (3), pendulation (19), extensor spasticity of legs (7), nodding spasm of head (20), jerky movements of head (3), choreiform movements (20), hemichorea (13), adiadochokinesis (11, 19) ataxia (11, 19), tremor (3), Rombergism (3), unsteady gait (3, 19), hyperhidrosis of hands and face (7), dwarfing (18, 21, 22, 23, 24), hydrocephalus (25), cranial deformity (18, 26, 27), oxycephaly (28, 29, 30), brachycephaly (19), tower head (31), enlarged parietal foramina (31), kyphosis (11, 17, 23, 32, 33), lordosis (4), dorsal scoliosis (34), abnormally high palate (2, 32), hypoplasia of the mandible (2), and congenital heart disease (6). With such protean clinical aspects one cannot consider the syndrome as a disease entity but rather “a rare combination of more or less frequent heredo-familial symptoms” (35).

Although mental deficiency or mental retardation is customarily regarded as part of the syndrome, this is by no means always the case. Snell (6) reports the case of a girl who before her death at the age of eight years was thought to have exceeded the

* Roth¹⁹ has concluded that in his cases muscular hypotonia was responsible for cerebellar-like symptoms.

family average in mentality; and the patient of Ellis and Law (21) was consistently placed amongst the first four in a large class of girls her own age. The fundus lesions were described by Laurence and Moon (1) as several irregular figures scattered over the fundus oculi but especially aggregated toward its periphery. An "atypical" retinitis pigmentosa is the most frequently encountered, but there have now been described (34) at least four variants of ophthalmoscopic finding in this condition: typical retinitis pigmentosa, "atypical" retinitis pigmentosa, macular dystrophy, and "atypical" retinitis pigmentosa combined with macular dystrophy.

More frequently than not nystagmus is present, and has on at least one occasion (12) been described as "violent." It has been suggested (21) that this might be better termed defective fixation than true nystagmus. There occurs an early reduction of central vision and later peripheral constriction, which leads to a loss of central vision not correctable with glasses. Indeed it was the fact that in our cases so much money had been spent on glasses without any improvement in vision that led to a certain resentment and distrust of the medical profession in general on the part of this family. It was this fact, rather than any familial behavioral aberration, that brought about a certain amount of curtness and lack of cooperation in some members of the family when our Case II was admitted to this hospital and limited the extent of this study. Mental disease as reported here has been noted before in the Laurence-Moon-Biedl Syndrome, Scott and Johnson (2) having reported a "maniacal form of insanity" in one of their cases. Also Van Bogaert and Borremans (7) found a hasty temperament in one of their cases. Headache is not usually associated with the condition although it has been a prominent feature in two of the reported cases (28, 36). Abnormal speech has been noted on a number of occasions and these abnormalities have been variously described as: dysarthria (2), indistinct speech (2), scanning speech (19), difficult speech (36), speech broken and jerky . . . words poorly formed and difficult to understand . . . not dysarthric (36), and marked difficulty with speech and apparent blocking of thought (37). No such abnormalities were detected in any of our cases.

All of the cases originally described by Laurence and Moon (1) had a "tipsy" dragging gait, and such a gait has been described by a number of authors since that time (19).

Despite the infrequent occurrence of the condition a number of metabolic data have been accumulated. The glucose tolerance curve has been reported as normal in some cases (9, 11, 13, 16, 28, 36, 38, 39, 40, 41); as increased in others (3, 32, 37, 42). In some cases (28, 31) a diabetic type of curve has been reported. Also there has been reported: diabetes insipidus (3, 39, 43, 44), low blood sugar (45), polydipsia and polyuria (20), polyphagia (3), and obsession for sweets (28). Dax (46) reported the presence in the blood and urine of patients with retinitis pigmentosa (with or without other abnormalities) of a substance which was melanophore expanding in frogs. Such a substance was also present in such conditions as pituitary tumors, hyperthyroidism, and pregnancy. Lurie and Levy (3) have reported a low excretion of urinary androgens—such values as are obtained in hypopituitarism. A series of interesting urologic studies were carried out by Roth (19) in which he found on testicular biopsy tubular degeneration and absence of Leydig cells. He (and the discussor of his paper) attributed this finding to a long-standing failure of the anterior pituitary to produce gonadotropins—particularly since he had obtained very low gonadotropin values.

Also his values for 17-ketosteroids were lower than is seen in castrates; suggesting that the anterior pituitary failed also in the production of adrenotropic hormone. Partially on the basis of such evidence as the data enumerated above, an abnormality of the pituitary and/or hypothalamus has been postulated in the Laurence-Moon-Biedl syndrome. Both Griffiths (12) and Anderson (28) have independently found at autopsy a strikingly high proportion of basophilic cells and a relative paucity of eosinophilic cells in the pituitary. Anderson (28) observed that in 3 of the available 6 post-mortem examinations there was some abnormality in the hypophysis whereas nothing remarkable had been found in the hypothalamus. On the other hand Riggs (46) demonstrated in two cases congenital defects in the medial coat of the blood vessels supplying the region of the hypothalamus, along with other evidence of intra-uterine developmental arrest of the brain stem and cerebral cortex. Biedl (49) had originally proposed that the syndrome was a familial form of dystrophia adiposogenitalis of cerebral rather than pituitary origin.

It is not surprising that we found no other cases of the Laurence-Moon-Biedl syndrome in the family here reported for there have been no recorded cases of direct inheritance of the disease except possibly in the case of Van Bogaert and Borremans (7). Nor can we assume, though they have no children, that our Cases 1-4 are necessarily sterile. A normal child born to an affected woman has been reported by Biernond (50) and there have been instances of pregnancy ending in miscarriage or abortion (51). Apparently unaffected women of such families have had their pregnancies terminate in fetal or infant death (34, 37). Likewise a review of the family histories of recorded cases discloses a high incidence of neurologic disease and congenital anomalies; and less frequently psychiatric disorders. Some examples follow:

1. Scott and Johnson (2)—Polydactylism a definite hereditary feature
2. Van Lint and Van Bogaert (52)—Syndactyly with blindness in an uncle; congenital cerebello-pyramidal degeneration in a collateral branch
3. Jenkins and Poncher (53)—Congenital defect of the spine in a sister who died shortly after birth; Parkinsonism in father
4. Lhermitte and Bollack (18)—Deaf mute aunt; spina bifida in half brother; epilepsy in another half brother
5. Burn (13)—Two otherwise unaffected members of the family were deaf mutes; one sibling psychotic
6. Roth (19)—Four brothers with "familial eunuchoidism."
7. Steinberg (5)—Mother and maternal grandmother probably mentally defective
8. Klenerman (23)—Insanity in a cousin
9. Taylor (34)—Mother had two "nervous breakdowns"; stillborn female sibling with supernumerary fingers and toes and "part of the head missing"; great aunt had several miscarriages and stillbirths one of which was blind
10. Schwartz and Boudreau (37)—Epilepsy in an uncle; a series of peculiar infant deaths and stillbirths

In addition to the mention of epilepsy in otherwise unaffected members of such families, there have been recorded several instances in which patients with the disease had convulsions. Anderson (28) cites a case who died in convulsions; and Warkany and Weaver (31) report a case in which 4 or 5 seizures occurred between 6 months and 2 years of age. Epileptic seizures were a dominant feature in the case reported

by Schwartz and Boudreau (37). Seizures began at the age of 8 years, occurred usually once daily, and gradually increased in frequency and severity until at the age of 9½ years she was having as many as 17 seizures per day. During the period when seizures were occurring with such frequency, the patient had marked difficulty with his speech, a blank facial expression, and his motor activity was slow and purposeless. After being treated with phenobarbital, thyroid, and dietary regulation, the convulsions ceased. Such electroencephalographic studies as have been reported, however, have not suggested the presence of epilepsy.

BIBLIOGRAPHY

1. LAURENCE, J. Z., AND MOON, R. C.: Four cases of retinitis pigmentosa, *Ophth. Rev.* **2**: 32, 1866.
2. SCOTT, R. B., AND JOHNSON, P. T.: Laurence-Moon-Biedl syndrome; its occurrence in Negro child; treatment with gonadotropin and androgen, *Am. J. Dis. Child.* **63**: 733, 1942.
3. LURIE, L. A., AND LEVY, S.: Laurence-Moon-Biedl syndrome; report of 2 cases with unusual combinations of heredofamilial deviations, *J. Pediat.* **21**: 793, 1942.
4. BECKER, W.: Laurence-Moon-Biedlsches syndrom, *Monatschr. f. Kinderh., Berl.* **70**: 113, 1937.
5. STEINBERG, G.: *Ztschr. f. Mals-Nasen-u. Ohrenheilk, Munch., & c.* **42**: 320, 1937.
6. SNELL, JR., A. C.: Laurence-Moon-Biedl syndrome; report of case in Negro family, *Arch. Ophth.* **28**: 12, 1942.
7. VAN BOGAERT, L., AND BORREMANS, P.: Familial form of pigmentary retinitis with blindness and so-called cerebral obesity, with first autopsy report of case; discussion of Laurence-Moon-Bardet syndrome and its dissociated forms, *Ann. de Med. Paris.* **39**: 54, 1936.
8. GRIFFITHS, G. M.: Laurence-Moon-Biedl syndrome, pathologic report, *J. Neurol. & Psychiat.* **1**: 1, 1938.
9. KRARUP, N. B.: Case of Laurence-Moon-Biedl syndrome, *Nord. med. (Hospitalstid.)* **1**: 822, 1939.
10. BEATO FORN, M. A.: Síndrome Laurence-Moon-Bardet-Biedl (case clínico), *Bol. Soc. Cubana de Pediat.* **12**: 294, 1940.
11. GARCIN, R., MAN, H. X., AND PIGUET, B.: Syndrome de Laurence-Moon-Bardet-Biedl, *Rev. Neurol.* **77**: 269, 1945.
12. GRIFFITHS, G. M.: Laurence-Moon-Biedl syndrome, pathologic report, *J. Neurol. & Psychiat.* **1**: 1, 1938.
13. BURN, R. A.: Deafness and Laurence-Moon-Biedl syndrome, *Brit. J. Ophth.* **34**: 65, 1950.
14. DEMIRAG, B.: Syndrome "Laurence-Moon-Biedl", *Ann. Paediat.* **162**: 334, 1944.
15. BERGOUIGNAN, AND VIAUD: Syndrome de Laurence-Moon-Bardet chez le frère et la soeur: diversité des manifestations endocriniennes, *J. de Méd. de Bordeaux.* **123**: 129, 1946.
16. MONTANARE, J. C., MONTANARE, C. N., AND TURRE, O. R.: Síndrome de Laurence-Biedl. Observaciones clínicas en dos niñas, *Semana Méd.* **1**: 289, 1942.
17. PESME, P., AND HIRTZ, G.: Laurence-Bardet-Biedl syndrome without polydactylia, with special reference to blindness of hypophyseal origin; 4 cases. *Bull. et. Mém. Soc. franç. d'Ophtal. Paris.* **1**: 297, 1937.
18. LIERMITTE, J., AND BOLLACK, J.: Retinitis pigmentosa with adiposogenital syndrome and corporal malformations; case, *Presse Méd., Paris.* 722, 1936.
19. ROTH, A. A.: Familial eunuchoidism: Laurence-Moon-Biedl syndrome, *J. Urol.* **57**: 427, 1947.
20. MCKINNEY, M. MCD.: The Laurence-Biedl syndrome, *Proc. N. Y. Acad. Med., Sec. Neurol. & Psychiat.*, Feb. 10, 1931. (Abstract, *Arch. Neurol. Psychiat.* **26**: 655, 1931).
21. ELLIS, R. W. B., AND LAW, F. W.: Infantilism, obesity and retinal dystrophy; "forme fruste" of Laurence-Moon-Biedl syndrome, *Arch. Dis. Childhood.* **16**: 105, 1941.
22. MUTCH, J. R.: The Laurence-Moon-Biedl syndrome—Record of a case, *Brit. J. Ophthal., London.* **21**: 225, 1937.
23. KLENERMAN, P.: Laurence-Moon-Biedl syndrome; report of 2 cases, *J. Neurol. & Psychopath.* **15**: 329, 1935.

24. MOLITCH, M., GLADEN, R. G., AND PIGOTT, A. W.: Laurence-Biedl syndrome; 3 cases, *Endocrinology*, Los Angeles. **19**: 682, 1935.
25. SPEKTOR, S. A., AND SOKOLOV, D. D.: *Vestnik. oftal. Moskva.* **10**: 258, 1937; *Bentralbl. f. d. ges. Ophthalm.*, Berl. **38**: 602, 1937.
26. GILLESPIE, J. B.: Laurence-Moon-Biedl syndrome; *Ill. Med. Journ. Chicago.* **71**: 429, 1937.
27. GALDÉ VILLEGAS, A.: Adiposogenital syndrome with multiple malformations (complex form of Laurence-Biedl syndrome); case, *Medicina, México.* **15**: 364, 1935.
28. ANDERSON, N. L.: Laurence-Moon-Biedl syndrome; case report with complete autopsy, *J. Clin. Endocrinol.* **1**: 905, 1941.
29. MANN, I.: Developmental abnormalities of the eye, 1937, Cambridge, p. 193.
30. REVINSKY, S. A.: *Zentralb. f. d. ges. Neurol. u. Psychiat.* **84**: 670, 1937.
31. WARKANY, J., AND WEAVER, T. S.: Heredofamilial deviations; enlarged parietal foramina combined with obesity, hypogenitalism, microphthalmos and mental retardation, *Am. J. Dis. Child.* **60**: 1147, 1940.
32. ATTIAH, M. A. M., AND EL-GAMMAL, Y.: Laurence-Moon-Biedl syndrome, *Bull. Ophth. Soc. Egypt.* **33**: 155, 1940.
33. KUTUMBIAH, P., AND ABBU, C.: Laurence-Moon-Biedl syndrome, *Indian J. Pediat.* **9**: 120, 1942.
34. TAYLOR, C.: Case of Laurence-Moon-Biedl syndrome showing atypical retinitis pigmentosa associated with macular dystrophy, *Brit. J. Ophth.* **31**: 211, 1947.
35. WARKANY, J., FRAUENBERGER, G. S., AND MITCHELL, A. G.: Heredofamilial deviations, *Am. J. Dis. Child.* **53**: 455, 1937.
36. MCCULLAGH, E. P., AND RYAN, E. J.: Laurence-Moon-Biedl syndrome; report of four cases in one family, *Cleveland Clin. Quart.* **8**: 236, 1941.
37. SCHWARTZ, R. C., AND BOUDREAU, E. N.: Laurence-Moon-Biedl syndrome without polydactylism but with syndactylism; case, *Arch. Pediat.* **57**: 520, 1940.
38. LIKINS, C. M., JR., SCOTT, E. P., AND MANDELMAN, N. I.: Laurence-Moon-Biedl syndrome, *Am. J. Dis. Child.* **73**: 195, 1947.
39. MOGENSEN, E.: Case of Laurence-Moon-Biedl syndrome, *Nord. Med. (Hospitalstid.)* **10**: 1437, 1941.
40. RUGGERI, R.: Laurence-Moon-Biedl Bardet syndrome in 3 children of consanguineous parents, *Pediatrics.* **46**: 337, 1938.
41. WOLFF, M.: Laurence-Biedl syndrome; disturbances of water metabolism in 2 patients, *Dtsche. Z. Nervenheilk.* **146**: 213, 1938.
42. WENDT, S.: Case of Laurence-Moon-Biedl syndrome, *Nord. Med. (Hygeia).* **12**: 2840, 1941.
43. LYLE, D. J.: Early ocular manifestations in Laurence-Moon-Biedl syndrome, *Tr. Am. Ophth. Soc.* **43**: 71, 1945.
44. BERNARD, E., AND CHASSAGNE, P.: Dystrophie adipeuse-génitale avec polydactylie chez un garçon de douze ans (syndrome proche de la maladie de Laurence-Moon-Bardet), *Bull. et Mém. Soc. Méd. d. Hop. de Paris.* **54**: 1006, 1938.
45. WANG, E.: Laurence-Moon-Biedl syndrome with low blood sugar values, *Nord. med.* **28**: 2613, 1945.
46. DAX, E. C.: Melanosome-dispersing substance in blood and urine of cases with retinitis pigmentosa, *Tr. Ophth. Soc. U. Kingdom (pt. 1).* **58**: 227, 1938.
47. RATHMELL, T. K., AND BURNS, M. A.: The Laurence-Biedl syndrome occurring in a brother and sisters, *Arch. Neurol. Psychiat.* **39**: 1033, 1938.
48. RIGGS, H. E.: Discussion of 47.
49. BIEDL, A.: Ein Geschwisterpaar mit adiposo-genitaler Dystrophie, *Dtsch. Med. Wchnschr.* **48**: 1630, 1922.
50. BIEMOND, A.: Brachydactylia, nystagmus and cerebellar ataxia as familial syndrome, *Nederl. Tijdschr. v. Geneesk.* **78**: 1423, 1934.
51. AMYOT, R.: Pigmentary retinitis, adiposity and mental retardation (Laurence-Bardet-Biedl Syndrome), *Union Méd. du Canad., Montreal.* **66**: 823, 1937.
52. VAN LINT, A., AND VAN BOGAERT, L.: *Ann. Méd. Psychol., Paris.* **92**: 860, 1934.
53. JENKINS, R. L., AND PONCHER, H. G.: Pathogenesis of the Laurence-Moon-Biedl syndrome, *Am. J. Dis. Child.* **50**: 178, 1935.

PLASTIBASE—A HYDROCARBON GEL OINTMENT BASE

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In prescribing an ointment, the selection of the vehicle by the physician should command the same care as that required by the pharmacist who incorporates active ingredients into that base. Release of medication, inherent effect on the area of application and esthetic acceptability to the patient should be considered. Many ointment bases, official or non-official, are available to the medical profession and any new product should possess advantages which make it biologically and pharmaceutically superior. Such a preparation is to be found in a mixture of liquid and solid hydrocarbons, marketed commercially under the name of Plastibase®.

Plastibase, originally introduced under the name of Jelene 50 W[®], is liquid petrolatum (U.S.P.) thickened by the presence of 5 per cent by weight of polyethylene. The latter is dissolved in the oil at about 130 C. and "shock-cooled" to give it a creamy consistency. The resultant mixture is smooth, colorless, odorless, tasteless, jelly-like, with a melting point of 90–91 C. It is water-repellent but the addition of glyceryl mono-oleate makes it hydrophilic, capable of absorbing ten times its weight of water and remaining a creamy gel. The water absorbing preparation is marketed commercially as Plastibase, hydrophilic®.

INHERENT SENSITIZING PROPERTIES

Any substance which possesses inherent sensitizing properties or is an irritant would be unsatisfactory as a base in which to incorporate medicaments. Primary irritation may be ruled out by application of routine patch tests and this was carried out. Patches were applied to the forearms of 300 individuals and left in place for 48 hours. On removal, none of the tests were found to be positive.

The fact that Plastibase gave negative patch tests in all 300 patients seemed to indicate that it would be relatively non-sensitizing. However, selection of a constant site (the forearm) and normal skin, which were necessary to rule out irritant properties, made it necessary to do further studies to determine if it would be a sensitizer. It was decided that the only practicable method would be "usage tests". This was performed by selecting two preparations, each manufactured in Plastibase and another base. In one instance both Plastibase and the control were water-repellent, and in the other both were water absorbing. Results are shown in Table I.

Both patients who reacted to preparation A in water repellent Plastibase were able to use the base at a later date, when the skin condition had involuted. All patients used in this test had inflammatory skin lesions and the preparations used will be discussed later under therapeutic results.

From the Dermatology Division of the Boggs Medical Service, Baltimore City Hospitals and the Dermatology Division of the Medical Service, University Hospital.

This study was supported by a grant-in-aid from the Squibb Institute for Medical Research.

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TABLE I
Usage Tests of Plastibase Compared with Control Bases

Preparation	Patients Tested	Reaction	Length of Time Applied (Days)
A Plastibase water-repellent.....	326	2	2-10
Petrolatum.....	150	none	3-10
B Plastibase, hydrophilic.....	140	none	10-120
Vanishing cream base.....	60	none	10-60

TABLE II
290 Patients Treated with Twenty per cent Zinc Oxide in Plastibase

Condition	No. Patients	Duration of Application (Days)	Adverse Reaction
Vesicular eczema of hands.....	80	5-30	1
Stasis eczema, legs.....	43	10-90	None
Atopic eczema, acute.....	64	3-30	2
Colostomy.....	4	15-80	None
Chronic lichenified eczema.....	32	15-30	None
Localized neuro-dermatitis (fixed dressings).....	32	7-21	None
Contact dermatitis.....	35	7-21	None

ABSORPTION OF ACTIVE INGREDIENTS

This was studied *in vitro* by comparing absorption of salicylic acid from various bases into solutions of iron salts. It was found that Plastibase released the drug more rapidly than other bases, so patch tests of half-strength Whitfield's ointment in five different bases were applied to the back of a volunteer. At the end of 24 hours, the erythema at the site of the Plastibase patch was more intense than any of the others. The control patch test to Plastibase alone was negative.

STUDIES OF THERAPEUTIC ACTIVITIES

Zinc Oxide—One of the earliest and most extensive studies was the use of a mixture of 20 per cent zinc oxide in Plastibase. This has now been used on 290 patients. The results are outlined in Table II.

Most of the patients who were given this ointment to try felt that it was soothing. It seemed to have definite value in vesicular eczematous eruptions of the hands and "stasis" dermatitis of the legs. The only disadvantage noted was the difficulty in removing it from clothing such as hose, two or three launderings being necessary.

Four patients with colostomies all felt that this preparation was more soothing and protected the surrounding skin area better than aluminum paste or other substances previously used.

It was found to be superior to Lassar's paste as an occlusive dressing, having the advantages of remaining pliable and being more effective in adhering to the affected area. (see Figure 1)

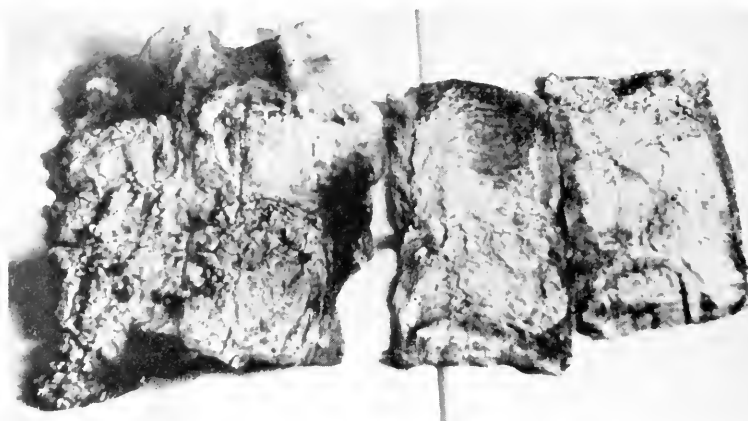


FIG. 1. Fixed dressings of Lassar's paste and 20% zinc oxide in Plastibase were applied simultaneously to an extensive leg ulcer. When removed at the end of one week, the Lassar's paste dressing (left) was stiff and cracked, while the Plastibase dressing (right) was still pliable.

TABLE III
200 Patients Treated with Tarquinor

	No. Patients	Conditions Benefitted
Tarquinor in vanishing cream.....	60	Psoriasis, vesicular eczema of the hands, eczematous epidermophytosis, localized neurodermatitis.
Tarquinor in Plastibase, hydrophilic. . .	140	Same as above.

Tarquinor—A little over a year ago, this mixture of crude coal tar and quinolor was introduced for the treatment of psoriasis and chronic eczematous conditions. The original preparation was incorporated in a vanishing cream type base and the therapeutic results were so encouraging it was decided to make up the same combination in Plastibase. The results are shown in Table III.

Most patients with psoriasis felt that *Tarquinor* offered more relief than other preparations used over a 6 month to 15 year period. In the new base there seemed less tendency to drying of the skin and it has been recommended that in the future *Tarquinor* will be in Plastibase, hydrophilic, as well as in a vanishing cream.

The therapeutic effect on dry, scaly eczemas and localized neurodermatitis was excellent. At present a series of patients are being treated with a combination of *Tarquinor* ointment and 0.5 per cent hydrocortisone or 0.1 per cent 9 α -fluoro-hydrocortisone. It is too early to make definitive statements but early results appear promising.

Spectrocin®—This product, a combination of neomycin and gramicidin, has a wide antibacterial range and is particularly useful since neither antibiotic is administered systemically under ordinary circumstances, eliminating the fear of sensitization. Four hundred and seventy-five patients have been treated with *Spectrocin*, 150 of whom used the petrolatum base and 326 the Plastibase-*Spectrocin*. The pyodermas

and secondarily infected eruptions cleared as a rule in 3 to 5 days with both ointments. Because active ingredients are released more readily from Plastibase it is recommended that all Spectrocin in the future be manufactured in this base.

Whitfield's Ointment—Because of the marked reaction noted when patch tests were applied, half strength Whitfield's ointment was considered the maximum strength to be used in this study. Thirty-five patients with dry, scaly eczematous eruptions of the palmar and plantar surfaces were treated. Exfoliation began in 48 hours and improvement was noted in 33 patients within a week. Eight were proved to be *T. rubrum* infections and all these patients showed improvement during the period of observation.

Other Preparations: In addition to the above described ointments, other substances which have been incorporated in Plastibase and used clinically are:

1. Liquor carbonis detergens, 3 per cent
2. Precipitated sulfur- and salicylic acid, 3 per cent each
3. Ammoniated Mercury, 3 per cent

SUMMARY AND CONCLUSIONS

A new ointment base, consisting of 5 per cent polyethylene in liquid petrolatum, has been studied clinically. This product is known commercially as Plastibase.

The product is made hydrophilic by the addition of glyceryl mono-oleate and is then capable of absorbing 10 times its weight in water.

It is non-irritating as shown by 300 negative patch tests.

It appears to have low sensitizing properties. A patient occasionally complains that it tends to dry the skin but this has been noted only in middle-aged or elderly individuals who generally have dry skin.

Plastibase has been shown to be pharmaceutically and biologically acceptable in this study and is a welcome addition to the field of ointment bases.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

The patient, a six month old white female who had been well until the present illness, had a "running nose" and slight cough the evening before admission. Feverish, she cried frequently during the night. The following morning, she was drowsy. Milk was given her but this was promptly vomited. The vomiting was not projectile. At eleven in the morning reddish blue areas appeared on the legs, arms and chest. A local physician, called at one o'clock, said that the red-blue areas were blood clots in the skin. At 1:30 P.M. the child's earlobes were black. At this time, she was unconscious. At a nearby hospital she was given caffeine-sodium benzoate for shock, penicillin for an unidentified infectious agent and digitoxin.

The account of this patient's birth and neonatal period; diet, later growth and development was normal. There was no reported exposure to infection. The mother's gestation and delivery were uncomplicated.

At 2:00 P.M. the patient was admitted to the University Hospital. She was described as being chubby, pale, and in peripheral vascular collapse. Numerous purpuric areas marked the skin of the face, extremities, abdomen, chest and back. The body temperature was 96 F. The respiratory excursions numbered 50 per minute. The blood pressure did not register. The pulse could not be felt. The patient's response to painful stimuli was feeble. Her anterior fontanelles bulged. The pupils were dilated and fixed. The corneas were steamy. The retina was reduplicated; the optic disc was poorly outlined. There were no hemorrhages or exudates in the retina. The ear drums were injected. There was no rigidity of the neck. The lymph nodes were not enlarged. There were no significant abnormalities elicited by examination of the heart and lungs. The abdomen was protuberant. The liver was palpated just below the costal margin. The extremities and genitalia were normal. The deep tendon reflexes were hypoactive. The Moro reflex was not present.

The spinal fluid was cloudy. It contained 743 lymphocytes, and 144 erythrocytes per cubic millimeter. The spinal fluid glucose, chlorides and total protein concentrations were respectively 5 milligrams, 122 milliequivalents and 176 milligrams. The peripheral blood examination disclosed a hemoglobin concentration of 42 per cent. The erythrocyte count was 4.00 millions. The leucocyte count was 15,450 per cubic millimeter. Forty-seven per cent of the leucocytes were granulocytes and 50 per cent, lymphocytes. From the secretions of the nose and throat, hemolytic staphylococcus albus and alpha streptococci were cultured. The blood culture was negative. *Neisseria intracellularis* was cultured from the spinal fluid.

The patient was given a transfusion of 150 cc. of whole blood, 5 per cent glucose, cortisone and adrenal cortical extract, penicillin, and Gantresin. Seven hours after admission the blood pressure had risen to 90 systolic over 10 diastolic. For several hours the child appeared improved, but subsequently became ashen and dyspneic and died on the day of admission, the 24 of January, 1954.

Clinical Discussion

Dr. J. E. Bradley: In the beginning, this child appeared to have had merely the symptoms of an ordinary cold. The first cause of concern is the fact that the child was drowsy. Even though it is not unusual for infants who have respiratory infections and fever to be drowsy and irritable, drowsiness should alert one to the possibility of a serious illness. One might begin speculating as to the nature of the rash. Its description is rather provocative in that it is described as being reddish blue. This would make one think of a hemorrhagic rash.

You might wonder if this was one of the contagious diseases such as measles. If so, you must remember that this infant was six months of age, and that most infants have natural immunity against measles at least to six months of age. Furthermore, the prodroma and description of the rash do not conform to measles.

Could it be scarlet fever? It is rather unusual to see scarlet fever in an infant of this age. The course of scarlet fever is rather clear-cut in that victims have vomiting, sore throat and rash developing in twenty-four hours. The rash of scarlet fever is one which seldom assumes the color implied by the name "scarlet." The rash is rather limited to the warm areas, to the axilla and groin. It has the appearance of red goose bumps.

One might think of the possibility of infectious mononucleosis but it is unusual to find a rash occurring so early in this disease. The rash usually appears about two to three days after the onset of glandular fever. One, of course, might wonder about spotted fever or a rickettsial infection, but the tick population is very inactive in January in Maryland.

The thing which always should come to one's mind when he sees a hemorrhagic rash, and we presume this was hemorrhagic from the description, is septicemia. This should be your number one diagnosis.

In an overwhelming or fulminant meningococcemia it is amazing how quickly patients develop purpuric areas. Frequently, if a patient survives, the dermal tissues break down and leave ulcerated areas. From the physical examination, one has a very definite impression that this was an infant in very serious vascular collapse; an infant who had bulging of the fontanelles. I think that this was a case of meningococcemia with probable meningococcal meningitis and adrenal insufficiency.

Fulminant meningococcemia has gone under the name of Waterhouse-Friderichsen's syndrome. It was described originally as a hemorrhagic condition of the adrenals. Williams of Australia carefully analyzed 18 cases. All had identical symptoms of adrenal insufficiency but only 9 had gross hemorrhage into the adrenal gland. Dr. Arnold Rich at Hopkins described cases without massive hemorrhage but with small areas of necrosis throughout the cortex.

With the advent of "sulfas" and agents to correct electrolyte imbalance, we read of individuals surviving acute adrenal insufficiency. I wonder whether we have been successful in treating only those individuals who did not have massive hemorrhage.

Norepinephrine, because it effects vascular constriction but does not increase cardiac output, has been shown to be of considerable value in cases like this. It seems to complement the action of cortisone. It might have been of great value in this case.

It is my opinion that this infant had meningococcemia, meningococcal meningitis and acute adrenal insufficiency.

Student: How do you explain the temperature of 96 F. recorded in the physical examination?

Dr. Bradley: The absence of fever might be a manifestation of shock. No blood pressure or pulse was obtainable.

Student: Do you advocate doing a lumbar puncture before you institute therapy?

Dr. Bradley: I think the most important thing is to begin therapy as soon as possible after the diagnosis is made whether a lumbar puncture has been done or not.

Student: What is the evidence of adrenal insufficiency in the physical examination?

Dr. Bradley: Vascular collapse, and shock.

Student: Are some of the newer "vasopressors" all right to use in a case of this type?

Dr. Bradley: I believe that Norepinephrine has been the most effective agent so far.

Student: Why was Gantrisin used rather than sulphadiazine?

Dr. Bradley: There is really no preference between the sulfas. Gantrisin has been found to be effective.

Student: Is there anything typical about the rash pattern?

Dr. Bradley: No, the rash pattern is not typical.

Dr. S. T. R. Revell: I do not think there is evidence in this case that there is adrenocortical insufficiency. One considered cause of acute adrenocortical insufficiency is adrenal hemorrhage, but its incidence is much lower than the 50 per cent cited by Dr. Bradley. I think the chances are very good that this patient had petechial hemorrhages in the adrenal glands, and a 33 per cent chance that the adrenals had massive hemorrhage.

Dr. J. E. Bradley: Dr. Revell, I believe I mentioned before that it seems to me that something more than the adrenal hemorrhage as described by Waterhouse and Friderichsen is necessary before collapse occurs. There seems to be more than the necrosis described by Dr. Rich to explain the death of these individuals. As to supportive evidences of adrenal insufficiency, I think that the work of Margaret Smith and others in finding electrolytic changes occurring in these individuals tends to support the idea that involvement of the adrenals is important to the clinical characteristics manifested by patients like the one under discussion. However, I do not think that damage to the adrenal glands alone is responsible for death.

Pathologic Discussion

Dr. Hugh R. Spencer: At autopsy numerous purpuric areas over the face, lower abdomen, and extremities were seen. Similar areas, though less numerous, were seen on the chest, back and upper abdomen. Many of these hemorrhages were small, while others were large and confluent. There was slight edema of the subperitoneal tissues, around the root of the mesentery and aorta. The mesenteric lymph nodes were enlarged and soft.

The thymus appeared somewhat enlarged. The left pleural sac contained about 15 cc. of clear fluid. The heart was normal. The spleen weighed 30 grams, twice the normal weight for this age. The pulp appeared firm and congested. The follicles were not clearly identified. No abnormalities were noted in the gastrointestinal tract.

The liver, although somewhat enlarged, was histologically normal. The adrenals were normal in size and shape. On section, large areas of hemorrhage were noted in the cortex and to a lesser degree in the medulla. The kidneys showed no unusual change.

The brain bore the effects of increased pressure. The dura appeared normal. There was an apparent increase in the amount of the cerebrospinal fluid. It was slightly turbid. The arachnoid was transparent. The subarachnoid vessels were prominent. The gyri were widened and flattened. When viewed from the base, there was a filling of the interpeduncular fossa by a whitish exudate which filled also the cistern. The exudate extended posteriorly and laterally over the superior surface of the cerebellum.

This is a case of fulminant meningococcemia with cutaneous hemorrhages, hemorrhage into the adrenal glands and acute leptomeningitis. The meningococcus was found in the spinal fluid, but not in the blood culture. Absence of the organism in the blood culture is explained perhaps on the basis of antibiotic treatment. The syndrome presented in this case was described by Waterhouse in 1911 and Friderichsen in 1918, and almost always results from meningococcic septicemia. The fulminant meningococcemia is most commonly seen in infants and children, but it is not rare in young adults. Moritz and Zamcheck in a study of "Unexplained Deaths in Young Soldiers" found that meningococcemia was responsible for 110 of 750 cases of unexplained sudden death, that is, an incidence of about 15 per cent. In cases of this type, death usually occurs within from 6 to 24 hours. There is almost no other infection that kills so rapidly. Even though meningeal involvement occurs, clinical evidence of meningitis is frequently obscured because of the rapid course of the disease. The characteristic lesions are cutaneous and subserosal hemorrhages, adrenal hemorrhage (middle and inner layers of the cortex) and in many cases, evidence of early meningeal involvement. The meningococcus may often be found in the areas of cutaneous hemorrhage. Some observers have explained the peripheral vascular collapse which occurs in this condition on the basis of acute cortical adrenal insufficiency, but adrenal hemorrhage is not seen in all cases of fulminant meningococcemia. Moreover, complete cessation of adrenal cortical function does not produce peripheral vascular collapse in such a short time.

Anatomic Diagnosis

Petechiae and ecchymoses, skin, generalized; hemorrhage, adrenals, bilateral; acute leptomeningitis, early (fulminant meningococcemia); pulmonary congestion and edema; splenomegaly, moderate; mesenteric lymphadenopathy.

OBSTETRICAL CASE REPORT

From The Case Histories, University Hospital, Baltimore

M. W., a 26 year old gravida 4, para 3, was admitted to the hospital on April 5, 1955. Her past history showed a fairly extensive hypertensive disease for at least 5 years, and her entire pregnancy had been complicated by blood pressure elevation of moderate degree. There had been no evidence of cardiac or renal involvement and no complaints on the part of the patient. As pregnancy neared full term, the blood pressure remained stable at 160 systolic over 96 diastolic; urinary findings were negative; and there was no edema. By menstrual history and by examination she was between 38 and 39 weeks pregnant when admitted. She came to the hospital because of moderately profuse vaginal bleeding, accompanied by severe, constant abdominal pain and a firmly contracted uterus. Fetal heart sounds were absent and the diagnosis of abruptio placentae was evident. The patient's blood pressure had dropped from its previous level of 160 systolic over 96 diastolic to 106 systolic over 60 diastolic and the pulse rate was 104. The hematocrit was 24 and she exhibited other signs of early shock. Of particular importance, when blood was drawn to test clotting, it was found that no clot had formed after standing for 15 minutes. A rapid laboratory test showed a fibrinogen content of about 100 mgm. per cent.

Treatment? What should be done for this patient? What is the diagnosis?

Discussion: We have recently had brought to our attention a blood dyscrasia associated most frequently with two conditions, abruptio placentae and the retention in the uterus for several weeks of a dead erythroblastotic fetus. The fibrinogen content of the blood becomes depleted until it reaches a dangerously low level (hypofibrinogenemia) or disappears (afibrinogenemia). When this occurs, bleeding cannot be controlled; for clotting will not take place and death from hemorrhage will ensue unless fibrinogen can be supplied in sufficient quantities. There are two ways of doing this: (a) The giving of whole blood in large amounts, and here some believe fresh blood is better than that from a bank; and (b) the administration of fibrinogen itself. The latter is now available commercially and is extremely efficacious. The product is somewhat expensive but is such a specific for these cases that it should be readily available in every hospital admitting obstetric cases.

In the case under discussion, blood in any great amount seemed contraindicated, since she was undelivered and bleeding would continue until the uterus was emptied and could contract down.

Actual Treatment: The patient was given three units of fibrinogen intravenously, after which blood clotting became normal. Since the cervix was unfavorable for vaginal delivery, a Cesarean section was done and a stillborn baby delivered. The placenta was completely separated; however, the uterus contracted well and did not require removal. At the start of the operation she received whole blood which was continued until a total of 2,000 c.c. had been given. Recovery was uneventful.

BOOK REVIEWS

Proceedings of the Seth Gordhandas Sunderdas Medical College Staff Society. 4 Volumes, Meetings 1943, 1944, 1945-46, 1950-51. Bombay, India.

These volumes include complete papers and reports presented during the society meetings. Discussions of the papers are quite valuable and extensive. The contents differ from American literature in the number of papers concerning diseases caused by parasites. The books are well edited and quite complete. The bibliography is primarily American.

E. RODERICK SHIPLEY, M.D.

Principles of Refraction. Sylvester Judd Beach, C. V. Mosby Company, St. Louis, 1952.

Short textbooks dealing with the principles of any subject are often sketchy. More often other books of this sort will deal not only with basic principles, but will introduce controversial opinions, elaborating on intricate detail until the reader loses all interest. This can be especially true in any short textbook dealing with optics, the basic principles of refraction, and the treatment of refractive errors. There is an irresistible tendency on the part of such writers to wander far afield into theoretic optics, often introducing mathematic formulae so that the reader is dissuaded from using the book as a reference.

It is gratifying, therefore, to review such a book as Dr. Beach's "Principles of Refraction". The title is aptly chosen. He could very well have called it "A Short Textbook of Refraction", but chose not to do so. In this book Dr. Beach has struck a very happy balance between a mere outline of principles and a lumbering, abstruse book of optics and refraction. This reviewer feels that a considerable amount of work was done in order to achieve the apparent simplicity of the book. This apparent simplicity is disarming, since upon reading the book it becomes clearer to the reader that every sentence was carefully constructed, all extraneous detail omitted; the whole thread uniting the book being one of the practicality of refraction. The book is designed not only for beginners in ophthalmology, but is an excellent short reference book for busy practitioners of ophthalmology.

The opening chapters dealing with the nature of optics and refractive errors are written with a clarity and a compactness that speaks for a broad background in this field. The literary style of the author is such that the interest of the reader never wanes. A thorough grasp of all the principles in these few opening chapters acts as an excellent springboard from which one may consult the more detailed textbooks dealing with this subject. The nature of refractive errors is excellently discussed.

The chapters on actual treatment of refractive errors are written in such a manner as to dispel the idea that refraction is a daily drudge; rather it corroborates the idea that refraction is a direct personal challenge, individual to each patient.

The final section of the book is unusual in that the management of ocular neuroses is rarely included in a textbook of this sort. The author discusses the various types of ocular neuroses that can appear during every day practice. Such a discussion could only have been written by someone with a vast experience in the practice of ophthalmology. Many of the cases cited are from the author's personal files. All in all, the book is well constructed and, what is more important from the seeker of references, interesting to read. This reviewer feels it is a definite contribution to ophthalmologic literature.

JOHN C. OZAZEWSKI, M.D.

Functional and Surgical Anatomy of the Hand. Emanuel B. Kaplan, M.D., F.A.C.S., Assistant Professor of Anatomy, College of Physicians and Surgeons, Columbia University; Attending Orthopedic Surgeon of the Hospital for Joint Diseases; Attending Orthopedic Surgeon of the Lebanon Hospital; Medical Director, Beth Abraham Home, New York City. J. B. Lippincott Company, Philadelphia, 1953, 288 pages, 132 Figure numbers. Price \$10.00.

Functional and Surgical Anatomy of the Hand is an excellent addition to the literature concerning the special problem of the hand. The text is well organized and easily read. Much of the material is

presented in tabular form, and thus adds greatly to the value of the book. Of special interest is the considerable space devoted to the mechanisms of action of the hand, the inclusion of which makes this text extremely useful to the surgeon. The inclusion of some comparative anatomy of the hand adds to the understanding of the relationship between structure and function.

The book is profusely illustrated by excellent original plates drawn from dissections by the author. *Functional and Surgical Anatomy of the Hand* is recommended as an excellent specialized text.

E. RODERICK SHIPLEY, M.D.

The Primer of Allergy. Fourth Edition—Vaughan and Black, The C. V. Mosby Company, 1954 (184 pages of text and illustrations, 7 pages of index).

Dr. Vaughan, author of the original *Primer of Allergy* designed to give the allergic patient some insight—not only into his own condition but into the subject of allergy—was extraordinarily successful. There is no more difficult medical writing than that designed to interpret a complex subject for the untrained layman. The author devised a method of approach that was most novel and which has been very successful. He likens allergy to a political state. He then creates an analogy between the patient's problem and that of a state at war. This approach is used throughout and it is surprising how he is able to draw such a persuasive and convincing picture; he actually makes the analogy used entirely reasonable and acceptable.

Dr. Vaughan further enhances the value of his book by inclusion of several very amusing and instructive cartoons and pictures, which serve the purpose of clarification exceedingly well.

Dr. Black, who has revised the original text since Dr. Vaughan's death, has brought it up to date so that it is entirely current. No one treating allergic patients can fail to realize or to appreciate the value of a book of this type to both the patient and the allergist, because the more any patient knows about a complicated condition such as allergy the more that patient can help the physician and himself. The book can be highly recommended.

HOWARD M. BUBERT, M.D.

The Anatomy and Surgery of Hernia. Leo M. Zimmerman, M.D., and Barry J. Anson, Ph.D. (Med. Sch.), Williams and Wilkins Co., Baltimore, 1953. Price \$10.00; 374 pages, illustrated.

Approximately five per cent of all adult males and about one per cent of all females have a hernia of one type or another. Correction of this abnormality is consequently of considerable interest to those physicians performing abdominal surgery. This text provides an excellent review of the problem and serves as an easy reference for the surgeon during his training.

The Anatomy and Surgery of Hernia begins with an exceptional chapter on "Hernia Through the Ages". The section concerning "Hernia in General" is recommended reading for the student, the practitioner and the specialist. "The Anatomy of the Abdominal Wall" is well presented and illustrated. The remainder of the text is divided into chapters considering the specific types of herniae and their treatment. This book is concluded by an excellent section concerning the "Medicolegal Aspects of Inguinal Hernia".

E. Roderick Shipley, M.D.

Patterns of Disease on a Basis of Physiologic Pathology. Frank L. Appleby, M.A., M.D., D.Sc., F.R.C.P., Professor of Pathology, Medical Coll. of Va., J. B. Lippincott Co., Philadelphia. 1951. 50 Figs. 37 Charts.

The purpose as stated by the authors is to bridge the gap of beginning and progress of a disease process. This includes biochemical and altered physiologic processes together with the compensatory mechanisms avoiding too much emphasis on the final morbid anatomic change. This is a commendable purpose but unfortunately failed to be achieved except in a rather elementary manner. There is extreme oversimplification and presentation with such a finality as to obscure many of the problems of this rapidly advancing field. There is no bibliography. There are omissions that exclude its use as a reference text and lack of pathologic detail that prevents its use as a pathology text.

EDWARD F. COTTER, M.D.

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EDITORIAL

CURRICULUM

A confrere and senior faculty member recently suggested that the school declare a sabbatical respite for the curriculum in order to fully appraise the changes made a year or so ago. This is a very tempting suggestion and one which might find acceptance in some quarters. Such consideration would certainly provide for more restful spring and summer evenings and furthermore, would possibly not detract greatly from academic achievement.

Nevertheless, a curriculum committee must not vegetate, must probe to take advantage of its own advances and mistakes as well as those of other schools. Moreover, it is well to listen to student and faculty critique as a guide for rational change. Actually, one fast comes to realization that a curricular shift is for the training and guidance of faculty as well as for student. Minor change by simply adjusting hours affects no one. On the other hand, a broad altered approach, a change of concept, involves faculty foremost and herein lies the serious import of a changed curriculum. Because of the necessary careful integration between basic science and clinical disciplines, an alteration of one school year involves the total unit. In addition to the advantages invoked for the ultimate training of students, a curriculum committee, properly functioning, serves to narrow the breach between the basic science and clinical groups, integrates their thinking, sweeps away much duplication of effort, and provides far more comprehensive instruction.

In 1953, the School of Medicine, University of Maryland invoked what seemed to be a major departure from tradition. Junior medical students were essentially taken from the lecture halls and placed at the bedside. This move necessitated more intensive teaching, in smaller units, which obviously required more teachers with more time. The departments participating in this program were soon convinced that a more comprehensive student is produced by this method, one who is more mature medically with increasing confidence in himself. Essentially, the third year provides a clerkship with the fourth year presenting an outpatient or dispensary office practice. In many instances, senior students have served for a month or more on the wards as an intern. Here practical things are learned and there is encouragement to read. The new schedule provides considerable freedom as related to study programs, since it is done in association with patient contact. The curriculum directly affects student study habits as well. No longer will the student be enforced to endure

a didactic "shoveling" of information. The relief afforded the student from secretarial duties at the same time will require additional, extensive reading and background study without the close supervision and narrow confines of a didactic course. The student must assume additional responsibilities. Free time for extracurricular reading and special projects are now provided in the senior year. Planned, integrated seminars and conferences during the clinical years place emphasis upon the broad and general aspects of medicine so that an enterprising student has the opportunity to participate in combined clinical sessions of basic science and clinical problems conducted by leaders in respective fields. Outstanding medical educators from other medical schools now regularly visit the campus and participate in large and small group discussion.

Pathology remains the one discipline which enjoys active coverage throughout the entire curriculum including the basic science and clinical years. There is a profound need in American medical education for providing continuation of interest in biochemistry, pharmacology, physiology, microbiology, etc. during the clinical periods of instruction. Inroads are pointed in this direction because the basic science faculty member is becoming a better clinician and the clinician is now showing a fundamental interest in basic science problems. The medical curriculum must find means of perpetuating the physiologic, biochemical and microbiologic knowledge so well ingrained in early medical years.

The basic science curriculum has come to life providing a more enlightened program. The application of scientific facts is finding practical application through pertinent laboratory experimentation, small group discussion, and limited clinical integration when applicable. The vast wealth of medical science is more comprehensively covered. The student studies the literature and learns biostatistical methods. He is encouraged to speak out, analyze and criticize. The medical student has the opportunity to actively participate in sessions which emphasize social and economic conflicts of man and their relationships to disease. Seminar discussions conducted by some of the nation's outstanding scientists describe man and his relation to his environment. During this semester of instruction each of the major basic science disciplines find application. Group discussions now provide correlative guidance between basic facts and their clinical significance. Pathologic-physiology is comprehensively discussed in the overall curriculum. The sophomore student obtains better guidance in physical diagnoses and has the opportunity to elect supplemental training after termination of the formal school year.

Medical students find encouragement in seeking summer fellowships and appointments which permit their entrance in laboratories, wards and dispensaries enabling them to seek a firmer discipline. Here they become better acquainted with faculty members and often gain that confidence in themselves at a much earlier time than heretofore.

Buildings, spacious halls and laboratories are very helpful for a successful course of study. The real gains come, however, from the faculty and students inside these walls, from their enthusiasm for each other, from an enlightened objective, from continual probing.

Theodore E. Woodward
Professor of Medicine

EDITORIAL

NEUROLOGY

Neurology has been defined as that part of medicine which deals with the diagnosis and treatment of diseases and symptoms of the nervous system. A consideration of this definition will reveal that neurology is related quite closely to all branches of medicine. There is almost no disease which does not affect the nervous system directly or indirectly. This definition then serves to emphasize the common interests which the neurologist shares with all of medicine. That the importance of this system in medicine has long been recognized is evident by the amount of time devoted to this field in the basic science curriculum of almost every medical school. Few will belittle the importance of neuro-anatomy, neuropharmacology and neurophysiology as constituting very necessary parts of the basic knowledge of the physician. Unfortunately, in the more recent past this concern with the nervous system has not been carried over to the clinical years. Neuropathology and clinical neurology have not enjoyed in any degree the position of prominence possessed by their cousins of the basic sciences. This lack of interest in the clinical application of knowledge of the nervous system has largely been the result of the attitude of the neurologist himself. Although neurology in this country began with such men as William Hammond and Weir Mitchell working within the framework of internal medicine, it became in time a very restricted specialty. The neurologist for many years confined his interest to a few disease entities and developed into little more than an erudite diagnostician. His specialty was clothed in mystery and few were invited to share it. Eventually, few desired to enter the field of neurology for little emphasis was placed on treatment. Thus, neurology became in fact a most unattractive field for any physician who desired to offer his patients help.

The institution of a separate neurology service in the University Hospital is recognition by the University of a change which has occurred in the field of neurology in the past few years. This change has led to an expansion of the field. This has in part resulted from the popularization of some of the newer diagnostic techniques, such as the EEG and the EMG developed by the neurophysiologists. A still more important aspect of this change has been a renewed interest in treatment of neurologic conditions. Most of these conditions still lack cures; the same situation which holds true for most medical diseases; still these neurologic patients often were ignored by their physicians while those with afflictions of a different organ system were afforded considerable assistance through non-specific measures. Such measures can be of great help to the neurologic patient.

Neurology has changed further in that it has become less isolated. There has developed a greater interest in undergraduate teaching, a further effort to share its specialized knowledge with the rest of medicine. If every physician can be encouraged to think in terms of the nervous system, he will be able to handle more intelligently not only his general practice but the routine neurologic patients which appear so frequently.

For neurology to be of service it must maintain close contact with all branches of medicine and share its knowledge with others. It must also be receptive to the thoughts of others. For neurology to experience progressive development it must possess some degree of autonomy in academic and clinical spheres. Such development will result in better treatment of neurologic conditions by all physicians. As progress is made undoubtedly many conditions now the primary responsibility of the neurologist will become the responsibility of more physicians. Thus, the boundaries of the field of neurology will change in time but the position of this specialty as a contributing member of medicine will be maintained and secure.

C. Van B.

THE RESPIRATORY PORTIONS OF THE LUNG

AN ACCOUNT OF THEIR FINER STRUCTURE*

VERNON E. KRAHL, PH.D.

The microscopic structure of the lung is highly interesting from the historic and academic viewpoints, but a knowledge of the finer details of pulmonary structure is of considerable practical importance as well.

Understandably, the larger conduits for air, their linings, supporting structures et cetera have been relatively easy to study and are known in some detail. Their development, structure, arrangement into broncho-pulmonary segments, and their general histology are well described with close agreement in a number of special articles, monographs and textbooks, and so they need not be considered here. To say that these larger elements are present merely to serve the peripheral respiratory areas with their capillary beds is not to deprive them of importance from the practical viewpoint, for the trachea, bronchi and bronchioles are certainly frequent sites of disease. On the other hand, the majority of diseases which seriously disturb normal pulmonary physiology such as pulmonary edema, bronchiectasis, pulmonary emphysema, asthma, pulmonary hyaline membrane disease and others, involve primarily the peripheral components of the respiratory tree. These are the portions which have been less intimately known and about whose finer structure there has been so much disagreement. Accordingly the body of this paper is devoted chiefly to a consideration of the smaller subdivisions of the bronchial tree, with special reference to the alveoli and the nature of their respiratory surface.

By its very nature as a respiratory organ the mammalian lung must furnish a vast but delicate surface for the rapid exchange of respiratory gases. As a means of providing an adequate surface area within an organ of limited dimensions and volume the air is channeled into myriads of fine conducting tubes which terminate in millions of minute air spaces surrounded by rich capillary networks. Even though the air moves at its slowest rate of speed in the terminals of the respiratory tree the gas-blood barrier must be exceedingly thin to permit a prompt exchange of O_2 and CO_2 . As a result the lung consists of a delicate, highly vascular spongework which has been most difficult to study, visualize and to understand. Furthermore, there are many factors which singly or in aggregate profoundly affect the microscopic appearance of lung tissue. The stage of development at which a lung is observed is a

* The studies of the writer referred to in this paper were supported in part by grants-in-aid of research from the American Trudeau Society and the Frank C. Bressler Reserve Fund.

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The finer structures of the lung and particularly the anatomic components of the alveolus have long been a subject of considerable debate and of extensive research. Dr. Krahl of the Department of Anatomy has devoted considerable research in this direction and has on numerous occasions presented his research before national anatomic and clinical societies as well as in published works. In order to bring before the readers of the Bulletin a concise presentation of this subject we have asked Dr. Krahl to present in a review form pertinent data known to exist and to be of proved value relating to this important subject. This review should be of great interest to surgeons, internists and to all who are interested in basic pulmonary problems.—Ed.

factor because of the prenatal, neonatal and postnatal changes which they undergo. The degree of collapse or distension of the tissue at the time of fixation, the amount of blood remaining in the finer vessels, and the fixatives and stains employed likewise alter microscopic aspects of the lung. As a result lungs have not appeared the same to all who have studied them. The complexities of a spongework so delicate are difficult to appreciate from an examination of thin sections (the time-honored method of study) and it is really not surprising that it has been differently conceived and described by various authors.

The normal and pathologic anatomy and physiology of the more controversial areas are of frequent concern to physicians in a number of the specialties, so that a brief account of their structure in the light of some recent investigations may prove to be of interest.

PULMONARY LOBULES

Units of lung structure termed lobules are frequently referred to in accounts on the lung. There are both primary (Figure 1) and secondary lobules, although some authors fail to specify which unit is meant; referring to them simply as "lobules." In addition there appears to be some difference of opinion as to what constitutes a primary lobule. Primary and secondary lobules are distinctly different entities and since both are useful subdivisions a few words of clarification may be justified.

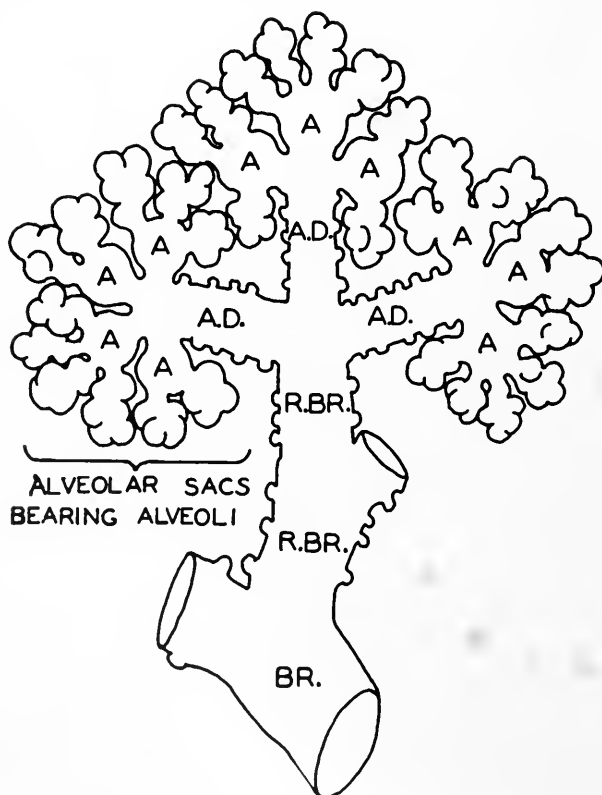


FIG. 1. Schema showing the relationships of the last orders of branches of the bronchial tree. A., Atria; A.D., Alveolar ducts; Br., Bronchiole; R.Br., Respiratory bronchiole. Modification of a diagram by W. S. Miller (1), to conform more closely with the observed contours of terminal airways of fresh lungs inflated in the transparent lung chamber (Krahl).

Secondary lobules: The smaller bronchial branches, termed *bronchioles* enter the apices of pyramidal structures called *secondary lobules*. In these they continue to divide giving rise to additional generations of branches. Many bronchioles point peripherally, but a large number of them take other directions; some are even recurrent. It follows, then, that the pyramids are variously oriented. They vary also in size. Those whose bases lie against the pleura trace polygonal outlines upon it which may be from less than 1 cm. in diameter to 2 or more cm. in diameter in man. Secondary lobules are bounded in some species (pig, ox, man) by connective tissue septa. In those which have subpleural bases the septa extend from the subpleural connective tissue to the dense sheaths of the bronchioles at their apices.

Lymphatic plexuses surround the secondary lobules and their vessels are large and distinct along the lines where interlobular septa meet the subpleural connective tissue. Deposits of carbon particles, etc., along these lymphatics help to accentuate the polygonal surface areas which contribute to the mottled appearance of the lung. Within these areas may be seen finer lymphatics marking out smaller enclosures which correspond to the outlines of *primary lobules* contained within the secondary unit. In animals such as the rat, cat, rabbit and dog which have a very thin pleura, no septal prolongations of the subserous connective tissue are produced and so the interlobular partitions and interlobular lymphatic plexuses are lacking. Such septa, when present would tend to delimit a lobular disease process and to restrict the extension of subpleural blebs.

Primary lobules: The bronchial branchings which occur within the secondary lobule end in a *terminal bronchiole*. The next generation of branches differs from that just preceding it by the presence of alveolar outpocketings scattered along their walls. These alveoli lack the cuboidal epithelium characteristic of the bronchiolar wall, are surrounded by a network of capillaries and thus are true respiratory structures. Such branches, therefore, are named *respiratory bronchioles*, of which there may be one or several generations. The last respiratory bronchiole terminates by dividing into 2 or more long hallways or *alveolar ducts* which also bear alveoli. The next order of branches described by Miller (1) in the cat, dog and man consists of from 3 to 6 nearly spherical enclosures called *atria*. These, however, have not been recognized by some workers and are not universally accepted as distinct entities. According to Miller, the atria give rise to a variable number of projections termed *alveolar sacs* which bear the terminal alveoli. The unit of structure shown in Figure 1, consisting of an alveolar duct, atria, alveolar sacs and alveoli, plus their accompanying nerves, blood and lymph vessels is the *primary lobule* of the lung. There may be from 50 to 100 such lobules contained within a *secondary lobule*.

BRONCHIOLES

With repeated branching the bronchial ramifications are progressively reduced in caliber. It has become customary to designate as *bronchioles* those branches which have a diameter of less than one millimeter. A criterion other than size would be desirable, for the diameter of an airway measured in a fixed section is almost certain to be less than that which the structure had in the living state. When the chest is opened there is an initial collapse of the lung involving primarily the smaller air-

ways, followed by shrinkage produced by fixing agents. The degree of shrinkage will depend in some measure upon the fixative employed and the method by which it is applied (immersion; intrabronchial instillation, with or without pressure).

Bronchioles are generally said to be devoid of cartilage, but if the characterization of a diameter of less than 1 mm. is adhered to, then it must be admitted that at least some of the more proximal bronchioles do contain cartilage in their walls. Miller (1), for example, has found that a point beyond which no cartilage appears cannot be definitely indicated. In some cases bronchioles as small as 0.6 or 0.7 mm. in diameter may contain cartilaginous elements in their walls. Furthermore, the relative position of the last piece of cartilage is not the same in all subjects, nor even in all parts of the lung of a single subject. Certainly the more distal generations of bronchioles lack cartilages and it is this feature which enables the smooth muscle bands in bronchiolar walls to completely constrict the lumens of these airways under certain conditions. As the bronchioles and their successive branches lie surrounded by respiratory tissue they are attached all about to the elastic spongework of the lung. Consequently, upon inspiration, they experience a circumferential pull and cartilaginous rings are not required for the maintenance of an open bronchiolar lumen.

Bronchioles, particularly the terminal ones, contain a higher proportion of smooth muscle than any other parts of the bronchial tree.* (In this respect they remind one of the relatively great muscularity of arterioles and their ability to control the flow of blood through capillary beds beyond them.) According to figures supplied by Grancher (2) the muscle bands are 5 times stronger in a bronchiole 1 mm. in diameter than in a bronchus 10 mm. in diameter. The smooth muscle is not arranged in encircling rings, but as long spiraling bands which wind along the bronchioles and, beyond them upon respiratory bronchioles and alveolar ducts, both in clockwise and counterclockwise directions.

As bronchioles are followed peripherally the ciliated columnar epithelial cells of their lining are gradually reduced in height. Although an occasional goblet cell is present, mucous glands, fortunately, are lacking in these small tubes where an accumulation of secretion might cause serious blockage. The epithelium lies upon a thin elastic lamina propria with elastic fibers running parallel to the long axis of the tube. External to this is the muscular layer, supported by connective tissue.

RESPIRATORY BRONCHIOLES

The most peripheral or *terminal bronchioles* give rise to the next order of branches, the *respiratory bronchioles*, so-called because of the alveolar respiratory elements which they bear along their walls. As the transition is made from the preceding order, the ciliated epithelial cells are reduced in height from columnar to cuboidal and finally, only nonciliated cuboidal cells are found. In this connection it is significant that ciliated cells extend farther peripherally than do the mucus secreting elements. In sections which contain respiratory bronchioles cut longitudinally the epithelium

*An interesting sidelight is the adaptive use to which bronchiolar smooth muscle is put in aquatic mammals such as the porpoises. In these animals the bronchioles may be completely constricted during a deep or extended plunge as a means of retaining quantities of air in the respiratory areas of the lung.

is seen only along those stretches of the bronchiolar wall which lie between adjacent alveolar outpocketings. The cuboidal epithelium stops abruptly at the distal end of a respiratory bronchiole so that the alveolar ducts which arise next appear to be devoid of a continuous epithelial lining.

ALVEOLAR DUCTS

The last in a short series of respiratory bronchioles produces two, three or more elongated air passages named *alveolar* ducts. Their delicate linings are too fine to be detected by ordinary methods and the walls seen in sections appear deeply indented by the surrounding bands of smooth muscle. The alveolar ducts are the most distal of the airways to possess muscular elements. Their elastic fibers, nevertheless, continue distally to the finest twigs of the respiratory tree.

Numerous alveoli open into the lumen of the alveolar duct like doors which enter upon a long corridor, except that in the lung the "doors" open also through the floor and ceiling of the hallway. Alveolar ducts end in rotunda-like spaces, the *alveolar sacs*. Miller (1), especially, would interpose between these two a subdivision which he calls the *atrium* (see Figure 1). As noted above, Miller has described atria in the cat, dog and man, although the authors of current textbooks of histology and monographs on the lung either do not mention them or else refer to them as "minutiae." In the mouse, I have not observed spaces which would correspond to Miller's atria. Further study seems warranted to clarify the status of the atria.

ALVEOLAR SACS

A variable number of more or less spherical spaces surmount the tips of alveolar ducts and these are the alveolar sacs (Figures 1, 2 and 4). Their walls are thin, consisting chiefly of a rich capillary network lined, like the alveolar ducts, by an extremely delicate epithelium. In addition to the elastic fibers shown in Figure 2, alveolar sacs are supported by reticulum and a few collagenous fibers, but no smooth muscle is present. Upon inspiration the elastic fibers in the walls of the proximal orders of branches are put on the stretch since they run mainly parallel to the long axis of the airways. However, the fibers upon reaching the alveolar sacs form a complex network which prevents overdistension and preserves the shapes of the sacs.

ALVEOLI

The *alveoli* are the terminals or "leaves" of the respiratory tree. They are small cuplike or bowl-shaped outpocketings which beset the walls of respiratory bronchioles, alveolar ducts and alveolar sacs. In aggregate their surfaces make up the greater part of the lung's respiratory surface area. Individually the alveoli are very small, having a diameter of $166\ \mu$ in man (3), but their numbers run into many millions so that the total respiratory surface area is enormous. The myriads of alveoli which must be accommodated within the lung leave little room for interalveolar connective tissue. Adjacent alveoli therefore are separated by a single wall or septum which is common to both of them. The only alveoli which may be said to possess walls of their own are those which have marginal bases applied to the deep surface of the subpleural connective tissue.



FIG. 2. Reconstruction of an alveolar sac, cut through at its origin. Elastic fibers encircle the entrance and form a network about the sac. Semidiagrammatic. (From W. S. Miller, "The Lung", 1947. Courtesy, Charles C. Thomas. Springfield, Ill.)

The most prominent feature of an alveolar wall is the capillary network which it contains. The net is so fine that the openings in the meshwork are often smaller than the diameter of the capillaries themselves, a situation which is not matched elsewhere in the body. The chief scaffolding or support for the capillaries is furnished by the network of surface and internal reticulin membranes (4). Present also are the elastic fibers, mentioned previously, embedded in an amorphous ground substance, and a few collagenous fibers. Smooth muscle is absent, for it extends peripherally only as far as the ends of the alveolar ducts. In lung sections, the bands of smooth muscle which encircle the openings of alveoli into a respiratory bronchiole or alveolar duct are cut through and are seen on either side of the alveolar entrance, but the muscle belongs to the airway and not to the alveolus. Postmortem changes and shrinkage resulting from fixation may account for the somewhat constricted entrances seen in alveoli which open into air tubes. The physiologic role of these muscular entrance rings is discussed by von Hayek (5).

Lying in some of the niches or spaces in the capillary net are large, seemingly isolated cells which have been termed *epicytes* or *septal cells*. These, in reality are the visible portions of the cells which make up the alveolar epithelium to be considered presently.

An inspection of thick (ca. 50 μ) sections of lung (in which the surfaces of inter-alveolar septa may be viewed) will show that some of the spaces of the capillary net are vacant, thus forming an opening between the alveoli which share the septum. Such interalveolar communications are termed *alveolar pores*. Some have thought them to be the result of damage to the alveolar walls by disease processes, for the pores become noticeable in lungs affected by fibrinous pneumonia wherein fibrin threads may be seen passing through the septal openings. In recent years, however, pores have been described by so many investigators in the normal lungs of such a large variety of animals, that their occurrence must be considered to be entirely normal (3, 6-8). An excellent review of the earlier literature is given by Loosli (7). As practical considerations it is emphasized that alveolar pores represent pathways through which edema fluid, cellular exudate and infecting organisms (pneumonia, tuberculosis) may spread throughout lobes. Alveolar phagocytes as well as tumor growths find their way from one alveolus to another via the septal openings. Pores are also important as collateral air passages for equalization of intra-alveolar pressure and as a means of preventing lobular atelectasis in instances of bronchiolar obstruction (9-11). The pores appear to become more numerous in older subjects.

It was pointed out earlier that a considerable distortion of tissue occurs when collapsed lungs are fixed for sectioning. When attempts are made to learn the relationships of the spaces seen in lung sections by making plastic reconstructions, still other irregularities enter in. As a result the shapes of the alveoli or, for that matter, of any of the finer airways are not accurately depicted. The walls of an alveolar sac, for example, seem folded and collapsed as indeed they must be and alveoli appear as irregular bulges between the folds (see Figure 2).

The normal contours of the respiratory bronchioles and the branches distal to them are well displayed in fresh lungs which have been redistended to their normal size. This can be done by placing the lungs of young mice in a transparent chamber in which they are gradually expanded by negative pressure and observed microscopically (12-19). In the course of these studies on the newborn mouse it was observed that the peripheral areas of the lung normally remain completely atelectatic for a week or more following birth. These areas contain the distal generations of branches which are only gradually entered and expanded by air. This expansion process which normally occupies several days may be accomplished in the lung chamber in minutes and the inflation of each new order of branches may be observed and photographed stage by stage (19) or recorded in motion pictures (14). The technique simplifies studies on the mode of branching, number of branches and their mutual relationships. Moreover, the airways are displayed in their normal, plump rounded contours and not as irregular, collapsed spaces. (Compare parts A & B in Figure 3.)

The relationship of alveolus to alveolar sac is well seen in fresh preparations. The terminal alveoli are shaped like shallow cups or bowls; that is, their entrances are wide, permitting easier ebb and flow of respiratory gases than would be possible through constricted orifices.

THE ALVEOLAR EPITHELIUM

The exact nature of the respiratory surfaces of the lung has been a subject of continuing interest, study and controversy for more than a century. Naturally, the

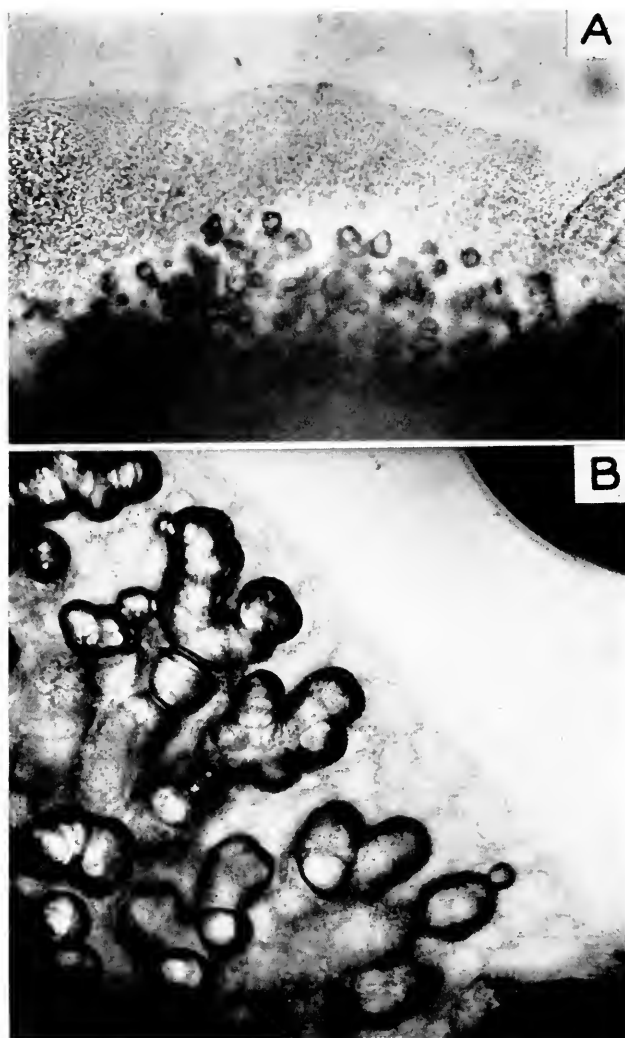


FIG. 3. A. Fresh lung of newborn mouse photographed in the transparent lung chamber. Partially collapsed airways extend into the peripheral zone of primary atelectasis (75 \times). B. Peripheral area of fresh lung after redistension of collapsed airways and inflation of more distal, previously atelectatic branches of respiratory tree. Note plump, rounded, normal contours of airways (75 \times).

pertinent literature has become voluminous and a number of conflicting views have been expressed. An historic review of the problem, although interesting, would be too lengthy for inclusion here, but the works cited in references 1, 3, 5, 7, 8 and 21, will serve, through their bibliographies as an introduction to many of the more significant contributions. Reduced to its simplest terms the problem has been one of discovering whether the respiratory surfaces of the lung are lined by a continuous epithelial membrane or whether the pulmonary capillaries in alveolar walls are naked, i.e., exposed directly to the air in the finer air spaces. It is indeed difficult to believe blindly in an invisible structure and some, since they could not see a continuous alveolar epithelium, simply considered the pulmonary capillaries to be bare or, at most, to be covered by a fine layer of the connective tissue matrix. Many others have attempted (unsuccessfully) by numerous methods to render the alveolar

membrane visible. However, with time and with the development of new techniques and new research tools, the assembled evidence is now overwhelmingly in favor of the view that there is an alveolar epithelium. As this controversy of long standing now seems about to draw to a close, it may be appropriate to summarize briefly the various pieces of indirect and direct evidence which may be marshalled in support of the concept, and to emphasize some pertinent implications and practical considerations.

*Phylogeny:** In many instances comparative anatomic studies of organs and systems have provided an insight as to their basic structure and function, and such a survey is helpful in the case of the lung.

Basically the lung is a broad, filmy and moist cellular membrane which separates capillary blood and alveolar air during the brief period in which they come into close relationship for the exchange of respiratory gases. The first lungs were little more than these elements arranged in the form of a saclike structure. In the course of phylogenetic development the general trend has been an increase in the internal surface area of the lung in parallel with the increasing oxygen requirements of the animals. So the lungs vary in their complexity from simple sacs with smooth interiors as in the fishes and some amphibians to the highly specialized and spongy organs of the birds and mammals. In man, the membrane is the summation of millions of minute membranous areas and the blood is channelled through countless thousands of capillaries woven about the terminal air spaces into networks which are the richest in the body. In 1 minute, normally, this mechanism brings some 5400 ml. of blood into intimate relationship with approximately 4200 ml. of air which, during gas exchange, are separated by a barrier which is upwards of 100 m² in area but only about 0.5 μ in thickness.

Although the mammalian lung consists of a great many elements comprising numerous tissues, much of the substance of the organ is engaged in non-respiratory services such as air conduction, nourishment, support, protection, neuromuscular control of the airways and provision of suitable resiliency of the tissues. They are present simply to serve the physiologic lung—the delicate gas-blood barrier. For reasons mentioned in introductory paragraphs, the complexity of mammalian lungs has rendered them difficult to analyze and to understand. But, by way of analogy, so are numerous modern machines and instruments of advanced design such as the carburetor, automotive transmission or electronic “brain.” Though complex in their present form, each has passed through a long evolution at the beginning of which stands a basic patent or principle (a valve, gear or glowing filament) from which

* Only a sketchy review of the phylogenetic development of the lungs is possible here, but those who enjoy surveying the past history of organs and systems will find the story of lung evolution a highly fascinating one. Suggested references are:

Romer, A. S. *The Vertebrate Body*, i-viii and 1-643, W. B. Saunders Co., Philadelphia, 1950 (See Chapter X).

Rand, H. W. *The Chordates*, i-xi and 1-862. The Blakiston Co., Philadelphia, 1950.

Bolk, L., E. Göppert, E. Kallius, and W. Lubosch *Handbuch der vergleichenden Anatomie der Wirbeltiere*. Bd. 3, S. 883-988. *Atmungssystem III, Schwimmblase* (by M. Rauther) und *Lungen* (by H. Marcus) Urban & Schwarzenberg, Berlin und Wien, 1937. (Contains an extensive bibliography.)

the more intricate device was developed and which is the key to the understanding of the form and function of the final product. In the lungs of vertebrates, then, the basic respiratory elements are a thin, moist cellular membrane overlying a rich capillary network.

a) Fish: In the lungs of the primitive African bichir (*Polypterus*), the lung fishes (*Epiceratodus*) and in the swim bladders of Teleost fishes (thought by most anatomists to be in some way homologous to the lungs) the gas absorbing areas—sometimes smooth, sometimes irregular or even lunglike in texture—are provided with a rich capillary net covered by a respiratory epithelium of endodermal origin.

b) Amphibians: In the Amphibia the increased oxygen requirements occasioned by terrestrial locomotion, absence of gills (in the adult) and other factors are met by the development of slightly more complex lungs which vary from simple membranous sacs to organs in which the lining is carried inward upon numerous vertical folds or septa. These are obviously a means of providing a greater respiratory surface area without increasing the over-all size of the lung. For example, in *Lepidosiren*, *Gymnophiona* and the Urodeles, projections or septa of the first order rise to a height of about 1 mm. and thereby approximately double the surface area of the epithelium. In addition to their use of a pulmonary respiratory epithelium, many forms carry on a high proportion of their respiration through the moist vascular skin surface and oropharyngeal membranes. Indeed, in some amphibians (certain Urodeles) the lungs are completely absent or greatly degenerated.

The interior of an Anuran (frog) lung shows a lattice-work of coarse ridges subdivided by septa of second and third orders into "alveoli." The thin septa are rich in capillaries, the latter being covered by squamous epithelium (21). The continuous flattened nucleated epithelial membrane has been well demonstrated in the frog in both surface views (8) and in sections (22).

The interalveolar septa are sometimes broken through so that communications exist between the individual chambers (21) (evidently the origin of alveolar pores in phylogeny).

c) Reptiles: The lungs of reptiles are of greater physiologic importance and complexity than in the lower forms because of still greater oxygen requirements plus the fact that the dry, thick and scaly skin cannot serve as an auxiliary respiratory surface. Reptilian lungs have developed additional orders of septa which divide the lungs into more numerous chambers lined by alveoli. Lungs are simplest in the snakes; more complex and spongy in consistency in the turtles and crocodiles. They are supplied with rich capillary beds and the air spaces, again, are lined by continuous flattened nucleated epithelial membranes (23).

d) Birds: The special adaptation of birds for flight has necessitated adaptive changes in nearly every organ and system for the conservation of space and weight and to meet the tremendous energy requirements of flight. The lungs of birds, accordingly, are unique in several respects. They are of relatively small volume and weight, undergo small volume changes and yet offer an enormous surface area relative to their size for rapid uptake of oxygen. The internal subdivisions consist of connecting systems of fine tubules in which there are no "dead-end" air spaces. Air entering the lungs passes out into a number of paired air sacs located in the neck, abdomen and other areas of the body. On expiration air is forced out of the sacs and

back through the lungs so that there is a true circulation of the air. Rich capillary networks occupy the interstices between the compactly arranged minute air capillaries or canaliculi of the lung so that large volumes of blood and air are brought into intimate relationship at the relatively enormous respiratory surface. The major air sacs are outgrowths of the lungs and they connect in turn with the smaller air spaces within the bones which may be pneumatized as far distally in the skeleton as the metatarsals in some cases. The air sacs have a smooth lining of squamous epithelium and the walls lack the vascularity typical of respiratory surfaces.

Less work has been published on the finer structure of bird lungs than on those of mammals, but here again opinion is still divided regarding the nature of the respiratory surface. Loosli (8, 23), using the time-honored but somewhat uncertain method of outlining cellular boundaries with silver nitrate, was able to demonstrate the outlines of alveolar epithelial cells in the frog and turtle, but not in the bird or mammal. He states, however, that he has improved the silver nitrate method and that it has given constant results. The success of the method depends upon the deposition of silver along the lines occupied by the intercellular cement substance. Assuming for the moment that the cells in question *are* present in the bird lung; if they should prove to be similar in thickness to those found by others lining mammalian pulmonary alveoli ($0.2\ \mu$ and less) (24), then Loosli's failure to delineate the alveolar epithelial cell boundaries may be explainable upon the basis that the intercellular material is simply too meager in quantity to bind visible amounts of silver, especially when overlying a number of other silvered and counterstained structures in the alveolar wall.

More impressive to the writer than this negative result are the findings of Bremer (25, 26) who, by a skillful combination of procedures was able to render the cells of the alveolar lining visible. Bremer gave repeated subcutaneous injections of Trypan blue (a vital dye) to rats and, following a rest period, found that some of the apparently isolated cells resting on alveolar surfaces contained dye granules in their cytoplasm. Adjacent to these in true cross-sections he saw a thin line of similar blue dye granules lying along the capillary wall, but could not determine whether the granules lay *on* the endothelium or *in* the endothelial cytoplasm. To make this distinction Bremer then applied to the lung sections the technique by which Wasserman (27) had demonstrated the "invisible" membrane of the fat cell, namely, the subjection of the cells to hypotonic solutions. The formerly ultramicroscopic portions of the epithelial cells imbibed fluid and in some areas swelled sufficiently to become clearly visible. The line of blue granules lying near the epithelial cells proved to be embedded in a thin protoplasmic film which was continuous with the perinuclear cytoplasm of the cells. The edges of the alveolar cells had spread out as a thin film over the capillaries and the mesenchymal elements around and between them. For reasons not yet clear not all the alveolar cells responded to the technique in this way, but neither do all bronchial cells which are easily visible at all times. Bremer (26) next applied these methods to the lungs of birds and again was able to render visible the previously ultramicroscopic portions of epithelial cells lining the finest air passages. The evidence indicates, but not conclusively, that the airways of the avian lung are lined by a continuous respiratory epithelium.

If the views of Loosli and others who have been unable to demonstrate an avian

respiratory epithelium are correct, then the birds would be the only members in the entire phylogenetic series to have lungs devoid of a cellular respiratory membrane. Such a possibility cannot be denied, yet it seems most unlikely. On the other hand, an ultramicroscopic cellular membrane in the lungs of higher forms is entirely logical and consistent with experimental observations. In amphibians, using the frog as the example, the cells of the epithelial respiratory membrane are visible at high magnification, especially at the locations of the nuclei. However, that portion of the cytoplasm which overlies the pulmonary capillaries becomes greatly attenuated so as to be practically indistinguishable from the capillary endothelium upon which it rests. Now, if the lining epithelial cells become so tenuous upon pulmonary capillaries of an animal in which the lungs are not of prime importance in respiration, it does not seem unreasonable to suppose that even more extreme attenuation might obtain (for more rapid diffusion of gases) in animals which breathe only with lungs and in which oxygen demands are far greater. Furthermore, an epithelial attenuation beyond the resolving power of the conventional microscope would explain the inability of numerous investigators to distinguish it. For an epithelium to attain ultramicroscopic dimensions is not at all incredible. As Bremer points out, protein monolayers can range from 10 to 18 Å in thickness ($1 \text{ Å} = .0001 \mu$). If 2000 Å is considered to be the practical limit of resolution of the light microscope, then there is a considerable submicroscopic range within which a protoplasmic film could exist and not be seen by ordinary methods. That living cells can spread their protoplasm to ultramicroscopic thinness will be mentioned later in the section on tissue culture.

e) Mammals: Since many features of the lungs of mammals including man already have been considered in some detail, no further description of them is required here. That the presence of a respiratory epithelium in mammals has been denied by so many investigators results primarily from their inability to demonstrate it by any of the methods which they used, and their reluctance to accept an invisible structure as real is understandable. Yet, as Cowdry (20) has so aptly pointed out, the presence of a plasma membrane bounding the cytoplasm of all cells is not questioned because of our inability to distinguish it directly with the microscope. In fat cells, for example, a limiting, but invisible film is generally recognized for without it the fluid fat would escape into the tissue spaces. That such blind acceptance may be well justified is shown by the work of Wasserman (27), mentioned earlier, who placed fat cells in hypotonic solutions with the result that their cytoplasm imbibed fluid and swelled sufficiently for the submicroscopic films to become visible.

As in the specialized lungs of birds, so in mammals with their high oxygen demands, certainly any reduction in the thickness of the blood-gas barrier would be distinctly advantageous in facilitating the exchange of respiratory gases. In both groups of animals equally remarkable examples of specialization and adaptation are to be observed in many tissues of the body, and the only modification presumed here is a further thinning of a squamous epithelium. That such protoplasmic attenuation does occur in mammals has been shown by the work of Bremer (25) cited above.

Additional evidence supporting the presence of a respiratory epithelium in mammals is supplied in the sections to follow.

Ontogeny: From the standpoint of embryologic development it is difficult to con-

ceive of air spaces devoid of a continuous epithelial lining. The anlage of the mammalian lung makes an early appearance as an epithelial outgrowth from the pharyngeal endodermal lining. The bifurcation of this primordium into right and left buds (corresponding to the future linings of the main bronchi) and their subsequent branching are well known. As this system of endodermal epithelial tubes ramifies it penetrates a mesenchymal mass which condenses about it and gives origin to the various muscular and supporting structures found in the walls of the definitive airways. For a time the developing lung has the microscopic appearance of a tubulo-alveolar gland. About $\frac{2}{3}$ of the way through gestation (the time varies in different species) the epithelial linings of the more peripheral branches of the bronchial tree undergo a change in which the epithelium seems to become discontinuous. A number of investigators (28-33) believe that the cells of the originally continuous epithelium actually separate, leaving intervals occupied by capillaries thus exposed to the air in alveolar ducts, alveolar sacs and alveoli. According to Loosli (8) the cells do not flatten, but degenerate leaving capillaries which are then covered only by the ground substance and reticulum of the mesenchymal tissue in which they are developing. Scattered cells, apparently remnants of the originally continuous cellular lining lie in the meshes of the surrounding capillary networks. These have been termed the *septal cells* or *epicytes*.

Assuming, for purposes of discussion, that the concept of a discontinuous epithelium is correct, then it is clear that the alveolar spaces must be interpreted as tissue spaces, for their walls would then consist principally of connective tissue of mesenchymal origin. Furthermore, the alveolar fluid bathing the walls would be thought of as tissue fluid. This would be the only known case of the direct exposure of connective tissues and tissue fluids to air occurring normally in the body. In other regions when air enters connective tissues the condition is a pathologic one known as surgical or interstitial emphysema. The condition of "functional interstitial emphysema" in the lung has been discussed by Macklin (34).

Any concept of the postnatal growth process of the lung is largely determined by one's views of alveolar structure. If it is believed that there remains throughout life a continuous alveolar epithelial lining, however thin, then one may assume that the postnatal growth of additional generations of fine airways and spaces is similar to that which occurred in the lung's prenatal development; i.e., a continuation of the budding and branching of new twigs by a proliferation of the epithelium of the pre-existing airways and an invasion of the mesenchymal elements. Those, however, who claim that the epithelium becomes discontinuous in later stages of prenatal development are faced with the problem of finding an entirely different type of growth process which would explain the ability of the lung to go on producing additional airways and terminal air spaces postnatally. Some workers find the solution to this problem in the mesenchymal elements which surround the existing air spaces. Loosli (8), for example, concludes that the growth of the lung appears to depend upon the postnatal development of the elastic fiber, smooth muscle and pulmonary vascular systems in the respiratory portions of the mammalian lung. He states: "In this study of the early postnatal growth, the most active tissue as noted by mitotic figures, is the residual mesenchyme which form the thick central stroma of the

respiratory spaces at birth. The cells in the intercapillary spaces of the alveolar walls appear to have little to do with the postnatal growth of the lung because very few mitotic figures, contrary to Bremer's observation, are seen in them." It is to be expected that numerous mitoses would be observed in a growing organ and particularly in the mesenchymal tissue which gives rise to a number of components in the walls of air spaces. That a preponderance of mitotic figures should be seen amongst the mesenchymal cells is not surprising either in view of their great quantity relative to that of the cells found in intercapillary spaces. Loosli does not state whether this opinion is based upon counted mitoses in the two cell types nor whether their numbers are compared directly or relatively. Ham and Baldwin (32) are more specific as to their conception of the mechanism of further growth. They describe in the developing lung two types of mesenchyme: a relatively cellular and a relatively non-cellular type. The former clothes and caps the branches of the endodermal tree while the latter fills in the remaining space. The branches, thus capped, invade the relatively non-cellular mesenchyme which gives rise to the supporting portions of the lung (pulmonary pleura, subpleural connective tissue, interlobular septa and outer fibrous coat). The cellular mesenchyme produces the other-than-epithelial elements in alveolar walls. The invasive structure would thus invaginate the non-cellular mesenchyme and thereby receive a coat of this material. Ham and Baldwin believe that most of the alveoli of early postnatal life are outlined by epithelium in fetal life. The pattern of reticular and elastic fibers formed about the epithelial enclosures in fetal life would be retained subsequent to the partial disappearance of the lining epithelium and so preserve the original shapes and sizes of the alveoli. The postnatal growth of new alveoli would, in their view, occur through the infiltration of the thicker alveolar walls by air with a splitting of the fibers in these walls.

Some original studies on the lungs of newborn mice examined in the fresh state in the transparent chamber may be mentioned here in support of the concept of a continuous alveolar epithelium. There are numerous reports of a gradual separation or breaking up of the originally continuous lining of the smaller air spaces during the latter part of gestation, but the situation in the newborn mouse does not confirm them. I have uniformly found that such lungs have a marginal zone in which lie the last generations of branchings to be formed prior to birth. Moreover, these branches and terminal alveoli are still in their initially atelectatic state. They occupy the marginal area seen in Figure 3 A and B which show it before and after expansion with air. A small area of this zone in another newborn mouse lung is seen at higher magnification in Figure 4. Nothing has been done chemically to the lung except to immerse it in the Ringer-Locke solution of the lung chamber. A number of atelectatic alveoli may be made out in the plane of focus. They appear as rosettes of cuboidal epithelial cells in which there is no evidence of stretching, flattening or separation of the cells. In the upper center of the field is an alveolus which shows particularly well the relationships of the pulmonary capillaries to the alveoli at this stage. Above the alveolus arches a capillary with an endothelial cell nucleus in focus in its upper wall; in the lumen is a red blood cell. The capillary lumen is separated from the tiny central space of the alveolus by the full height of the epithelial cells of its lining. If such a lung is subjected gradually to negative pressure in the lung chamber so that

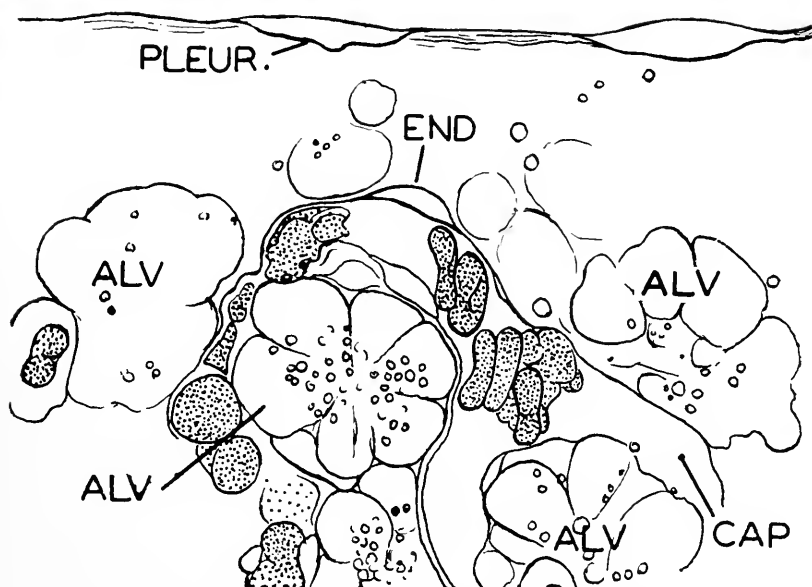
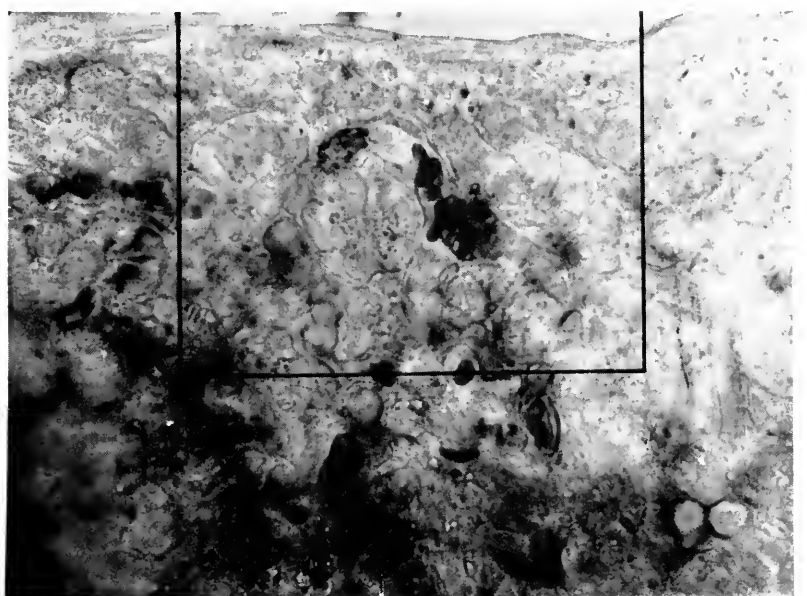


FIG. 4. Photomicrograph of newborn mouse lung; unfixed, unstained. Shows a small area of the persistent zone of primary atelectasis which is regularly found in the periphery of mouse lungs for several days following birth (ca. 700X).

The small area outlined in the upper figure is enlarged in the accompanying labelled sketch. Alv.; Alveoli. Alveolar epithelial cell outlines are best seen at this plane of focus in the central alveolus. Cap.; Capillary; part of the network surrounding these neighboring alveoli. End.; Capillary endothelial cell nucleus. Pleur.: Pleural mesothelial cell nucleus on margin of lung. Blood cells, both in and out of focus, are stippled.

Ringer-Locke solution enters the lung from the external reservoir under atmospheric pressure, then the terminal airways are expanded and the epithelial cells begin to flatten. It was originally hoped that this method would permit an observation of the stretching, flattening, separation or any other behavior of the cells originally lining an alveolus. However, in every case a point in the expansion process is reached when some resistance is evidently overcome and the process rushes to completion with such rapidity that this critical stage is blurred. When next observed, the alveoli, alveolar sacs, alveolar ducts, etc., are fully expanded, the capillaries are at or near the surface of the fluid filled space, and between them lie seemingly isolated cells which correspond to the septal cells or epicytes seen in fixed-stained preparations. Significant, however, is the fact that the most peripheral alveoli—those whose marginal bases are applied to the deep aspect of the pleura, never lose their visible continuous cuboidal epithelial lining, even when inflation is continued to the bursting point of the lung. This, I believe, is in accord with the view that there is a continuous epithelium. Naturally the areas between the isolated cells seem devoid of any covering since the lung is neither dyed nor subjected to a hypotonic solution as in Bremer's demonstration of the intervening protoplasmic films. But the marginal bases, being applied to subpleural connective tissue, remain relatively unstretched and still show a continuous epithelium which is available to serve as the basis for the postnatal sprouting and growth of subsequent generations of branches as postulated by Bremer (35).

Even if a postnatal alveolar epithelium had never been observed, one would seem to be on safer ground in assuming a postnatal continuation of the same process by which the lung had developed into a functional respiratory organ than to postulate a conversion at birth to a different one; namely, an invasion of connective tissue by air, which would be considered a pathologic process if it occurred elsewhere in the body.

Tissue culture: Much information about the structure and behavior of cells has been gained through the study of explanted cells in tissue cultures. Epithelial cells studied in this way have been observed to spread their cytoplasm out over the surface of the glass cover slip in films of extreme thinness. In fact, epithelial cells appear to have a natural tendency to take this form when given the opportunity. The cytoplasmic extensions can even become so thin that there is no room in them for the finer cytoplasmic inclusions which are present in thicker portions of the cell. Such films are difficult to see in surface views and cannot be detected at all when turned on edge. As alveoli are gradually expanded by fluid prenatally or by air postnatally the cells of the epithelial lining are given ample opportunity to (or may even be obliged to) exhibit their natural propensity for becoming greatly attenuated. If this occurred and the protoplasmic films were spread out over the capillaries and other components of the alveolar wall they would undoubtedly be more difficult to detect than when viewed alone and applied to a glass surface. An alveolar epithelium which, in some parts may be invisibly thin becomes all the more credible with the demonstration of cytoplasmic attenuations as fine as 0.03 to $0.06\ \mu$ in tissue culture cells viewed with the electron microscope (36).

Rosin (37), who studied the growth of lung tissue in tissue cultures, observed an

intra-alveolar proliferation of cuboidal epithelial cells. The epithelial outgrowth proved to be derived from cells which lined the alveoli. The epithelial cells formed either a continuous cuboidal lining or filled the alveoli with continuous sheets of cells. This work correlates well with the concept of a continuous alveolar epithelium and with conditions observed in certain proliferative diseases of the lung which are considered next.

Pathology: There are pathologic conditions of the lungs wherein the small air spaces which usually appear devoid of a continuous epithelium become lined with a layer of epithelial cells of variable height. Such conditions are always serious because the thickening of the blood-gas barrier naturally impedes gas transfer across it and as the disease advances dyspnea increases until a point is reached when the body's oxygen needs are no longer met and death ensues. That the cells are epithelial in origin is generally agreed, but their original source is a matter of dispute. Those who believe in the presence of a submicroscopic alveolar epithelium consider the pathologic membrane to be a result of the thickening and proliferation of the cells of the original lining. Their opponents believe that the abnormal layer arises as a downgrowth of epithelium from more proximal airways which normally possess a visible cellular lining. So the correct interpretation of such pathologic conditions has direct bearing upon the problem of normal alveolar structure.

A commonly cited example of disease in which alveolar membranes occur is the tumor-like disease of the lungs of sheep called jagziekte. Its particular interest lies in its apparent relationship to certain cases of lung cancer in man (38, 39). Cowdry (20) illustrates the "hyperplastic alveolar epithelium" present in the diseased sheep's lung. Bonne (38) and Bell (39) each describe this peculiar disease in man and compare it with the special features of jagziekte. Alveoli become lined by cubical or columnar epithelium which may bulge into their lumens as papillomatous buds. There is practically no invasion or metastasis and Bonne has therefore suggested the name *carcinosis* for the disease. Bell feels that the epithelial growth is the result of some direct stimulation of the alveolar lining cells. In his opinion the thickened epithelium forms locally and not as an ingrowth from the more proximal airways. According to Bonne, the first sign of irregular epithelial growth is an increase and enlargement of the cells lining the alveolar sacs (alveoli). While cells lining the bronchioles may sometimes be affected, "the proliferation of alveolar cells may occur entirely independent of the bronchi as observed in serial sections." These observations accord well with the concept of a true alveolar epithelial membrane.

Numerous other lung diseases involving visible alveolar membranes might be mentioned here, but a few must suffice.* Mild irritation of the alveolar walls by foreign bodies or substances may bring about epithelization as, for example, in lipoid pneumonia. In chronic passive congestion and in interstitial pneumonia a thickening of interalveolar septa is followed by visible epithelization. Miller (1) has illustrated the lung of a patient who died of bronchopneumonia in which a cuboidal epithelial lining was present in alveoli lying just deep to the pleura. He shows a similar condition in a case of interstitial pneumonia and again in a case of Hodgkin's disease. His

* References to a number of pathologic conditions and experimental studies in which the alveoli become lined by a visible epithelium are given by Rosin (37) and Bell (39).

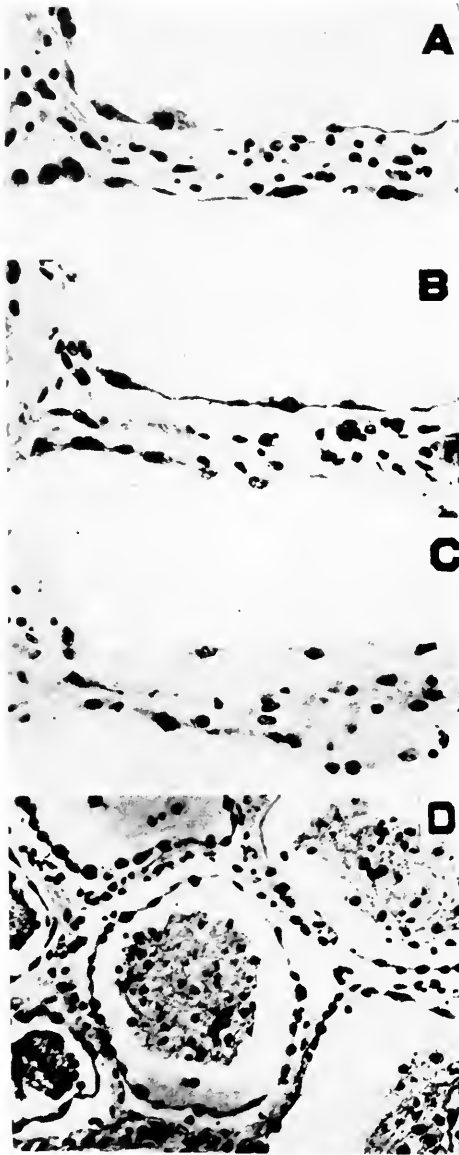


FIG. 5. Photomicrographs of the epithelial lining of alveolar walls. The lungs are of subjects who died of pneumonia and mitral heart disease. The epithelium has been raised as a continuous sheet by pressure of the serous exudate. (A, B and C: 440 \times , D: 250 \times .) From "The Lung" by W. S. Miller, 1947, Courtesy, Charles C. Thomas, Springfield, Ill.

presumption is that the epithelial membranes in these instances had their origins in the normally invisible alveolar epithelial lining.

Even more interesting from the standpoint of demonstrating an alveolar epithelium are Miller's photomicrographs of lungs in which serous exudate (in pneumonia, mitral heart disease) had evidently pushed the epithelium away from the alveolar walls. (See Figure 5.) He felt that the raised cells had imbibed sufficient fluid to become visible. In alveoli having only a portion of the epithelium raised, the latter is a distinctly cellular membrane, but it is continuous with what appears as only a

faint, thin line where the serous exudate has not pushed off the epithelium. (Figure 5 D.)

Pathologic alveolar epithelial membranes might conceivably have their origins in proliferations of bronchiolar linings, but I believe that the best evidence favors the view that they arise locally in the alveoli through hypertrophy and cell multiplication of a thinner epithelial layer already present.

Those who hold that there is no alveolar epithelial membrane have criticized Miller and others for the use of pathologic material to help support their beliefs. But surely this would not be the first case in which a study of pathologic material has shed light upon a problem in normal histology.

On occasion a lung which has been mishandled in the preparation of sections will show a detached alveolar epithelial lining. Miller (1) shows such a section. Bensley and Groff (40) have reported detached alveolar epithelium in poorly fixed sections of rat lungs. In our own laboratory some lungs of normal prenatal and neonatal mice were badly distorted and shrunk during their preparation with the result that the entire epithelium was detached from alveolar walls and so became clearly visible. Representatives of these preparations are shown in Figure 6. Some of them strongly resemble Miller's illustrations of diseased lungs in which membranes have been raised by the pressure of edema fluid. These examples of pathologic and damaged lung sections help to strengthen the case for a continuous alveolar epithelium.

Electron microscopy: The strongest proof of an alveolar epithelium is found in electron micrographs of mammalian lungs. Even here there are differences of opinion. In their electron micrographs of rat lungs Swigart and Kane (41) found that some material intervened between the air space and the capillary, but considered it to be a continuation of the alveolar septal stroma. On the basis of their studies these authors conclude that evidence for the existence of a continuous epithelial lining between the alveolar space and the capillary is lacking. On the other hand Low (42, 24) has clearly and repeatedly shown that the lungs of a number of laboratory animals and man have a nucleated epithelium which lines the walls of pulmonary alveoli. (See Figure 7.) He considers it a true respiratory epithelium. Karrer (43) also has produced excellent electron micrographs of mouse lungs which show attenuated epithelium overlying the pulmonary capillaries. In retrospect it would appear that the lung preparations of Swigart and Kane had been damaged to varying degrees by long fixation in osmic acid (8 hours) and this may help to explain their failure to recognize the epithelial nature of the alveolar lining. Low (44) has shown that prolonged fixation with 1 per cent osmic acid causes tissue disintegration affecting especially the cellular materials. He reports that lung tissues become adequately osmicated and produce electron densities characteristic of such preparations within the first 15 minutes of fixation. The findings of Low and of Karrer, therefore should be more reliable because they have used far shorter fixation times in their studies.

Low (24) reports that the average thickness of the attenuated epithelium in the rabbit, guinea pig, dog and man is $0.2\ \mu$ (which is also the value for the practical limit of resolution in the light microscope). In the rat and mouse (animals which have been used extensively in studies of pulmonary alveoli) the epithelial sheet only occasionally becomes as thick as $0.2\ \mu$ and may become thinned out to only $0.02\ \mu$. This

explains the inability of so many workers, equipped with only the conventional light microscope, to detect the alveolar epithelium. They have seen only the thicker portions of alveolar epithelial cells (epicytes, septal cells, etc.) but not their broad, thin attenuations.

In some respects it is difficult, in the light of the many indirect evidences of an alveolar epithelium, to understand the firm refusal of many investigators to accept it, when the presence of other membranes has been accepted almost as a matter of course (in fat cells, kidney glomerulus) simply because a protoplasmic film of some kind 'should be present.' It is interesting to note that the electron micrographs of Low and of Karrer show portions of alveolar walls in which the overlying epithelium is actually thicker than the capillary endothelium which it covers, and yet no one, I believe, has ever doubted the existence of a continuous capillary endothelium.

Electron micrographs have done much to explain away arguments which have been advanced in the past against the presence of an alveolar epithelium. A single example may be mentioned. Ham and Baldwin (32), clearly outlined the endodermal cells resting on alveolar walls by the intratracheal injection of colored gelatin in late guinea pig fetuses and found the cells to be "clearly separated and rounded rather than thinned and flattened as they would be if the epithelium were continuous." In my own preparation of fresh mouse lungs mentioned earlier the endodermal cells also appeared to be separated just after the initial expansion of atelectatic alveoli. But they were flattened against the alveolar wall and thinned at the edges. When such cells were observed for an hour or more in the lung chamber, some of them were seen to round up and bulge more prominently into the alveolar lumen. This may represent a gradual internal adjustment to the new stretched condition of the cells. The electron micrographs of Low (24) show clearly that the attenuation of the perinuclear cytoplasm of alveolar epithelial cells is quite abrupt. Some cells which are well rounded may even show some undercutting of the nucleated portion of the cell and through the light microscope would give no suggestion that fine extensions of the cytoplasm might be present. Indeed, Low experienced some difficulty in establishing protoplasmic continuity even with the electron microscope in the rat and mouse where the epithelium becomes extremely tenuous. This was especially so if the epithelial cells were countersunk into the alveolar walls.

The findings on alveolar structure which have been made possible with the electron microscope materially strengthen the various types of indirect evidence which have been brought forward in support of the concept of an alveolar epithelial membrane; they weaken or remove many of the arguments against it. The maxim that "a picture is worth a thousand words" was never more applicable than in the present case.

FIG. 6. Photomicrographs of mouse lungs in which shrinkage caused by reagents has separated the alveolar epithelial lining from the alveolar walls. A and B show alveoli in deeper areas of the lung; C is a section through a thin marginal portion of the lung showing subpleural alveoli. A. Fetus, twentieth day. Note continuity of epithelium. B. An adjacent section of the same lung showing a wide range in the degree of attenuation of the epithelial cells. C. Newborn, one day old. Alveoli in peripheral areas retain a cuboidal epithelium for about a week following birth. 10% Formalin. H & E. (900X).

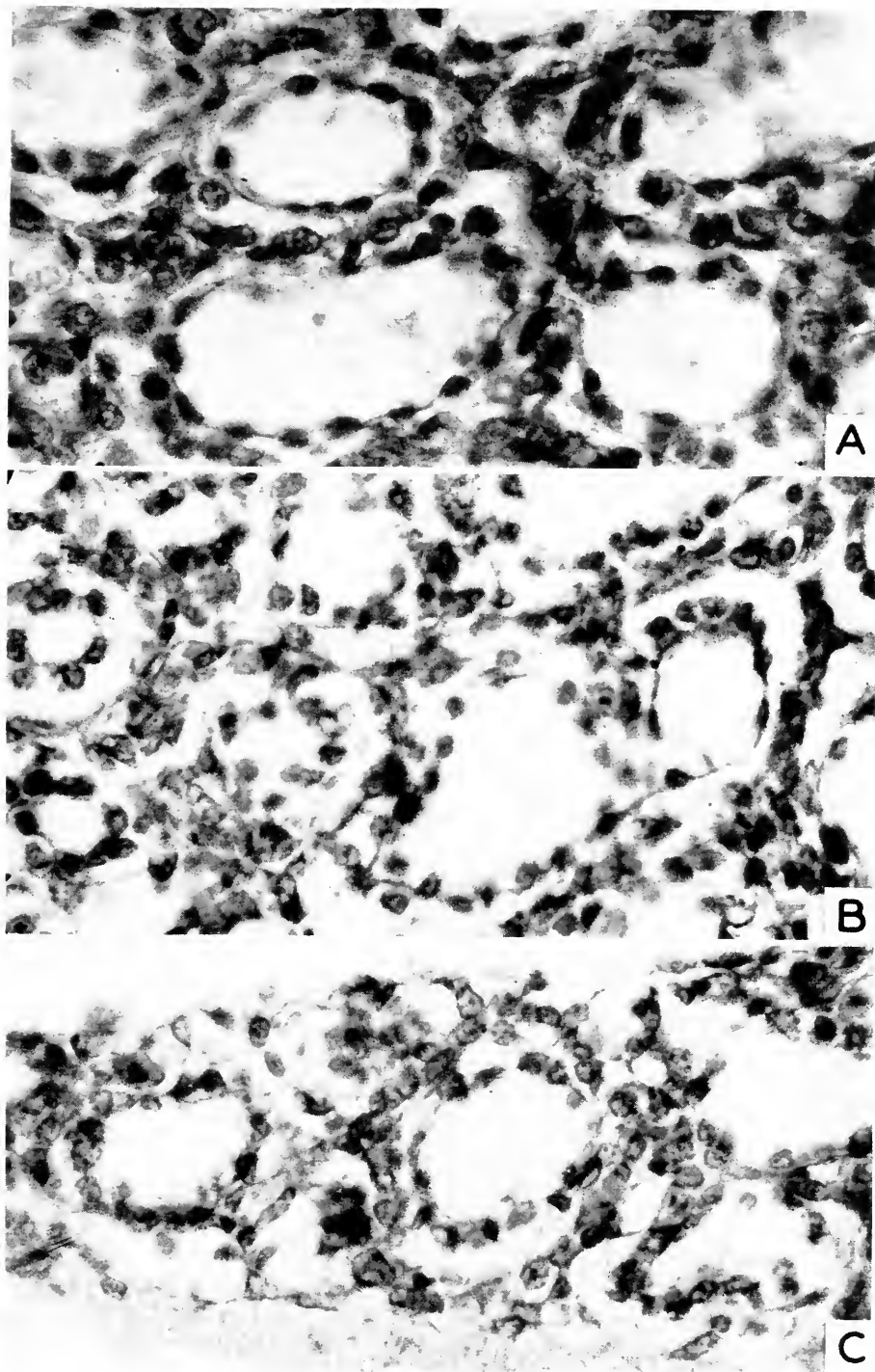


FIG. 6

ALVEOLAR EPITHELIAL CELLS

The pulmonary alveoli are lined by a continuous epithelial membrane. Portions of the cells making up the lining are submicroscopic and extend for considerable distances between the thicker, visible parts of adjacent cells which contain the nucleus and perinuclear cytoplasm. The latter appear, therefore, as if they were isolated cells occurring most often at the junctions of alveolar walls or resting in niches and concavities of the capillary meshwork and have been considered to be solitary cells by many investigators. They have received a variety of names such as *epicytes*, *septal cells*, and *Deckzellen*, and some authors speak of them as being remnants of the continuous alveolar lining of the fetus or as 'residual' epithelial cells. Despite their apparent separation from one another prior to or at the time of birth, the best evidence indicates that the continuity of the original endodermal alveolar lining is retained. The cells in question, therefore, are true epithelial cells and could well be designated the *pulmonary alveolar epithelial cells*.

The cells of the alveolar epithelium are very sensitive and labile; they may vary in their appearance with the age of the individual and with the physiologic state of the lung. The cytology and behavior of "epicytes" have been closely studied by a number of workers, notably Macklin.* Alveolar epithelial cells appear to have a number of roles, most of which may be grouped under the general heading of defense. They provide the moisture necessary for absorption of gases and altogether give off some 400 cc. of water in a day's time. They are also noted for their efficiency in removing from the air spaces large quantities of excess water.

Under certain conditions individual alveolar cells vacate their positions in the alveolar membrane and become the large, free alveolar "foam cells" which may be quite abundant in the presence of foreign particles and infective agents. What happens to repair the defects in the alveolar lining occasioned by such metamorphoses is not known with certainty. A new cell arising through mitosis of adjacent epithelial cells may fill the vacancy or the opening may remain, as some believe, and constitute an alveolar pore.† This would appear to be a problem for the electron microscopist.

* See Macklin (3) for a list of many of his publications.

† There must be some reparative process in alveoli of young individuals which covers many of the gaps left by alveolar cells as they are freed into the alveolar lumen, otherwise the alveolar walls would soon become entirely porous. The number of pores appears to increase in the aged with the formation of new openings called senile pores (3). The closure of such pores probably proceeds slowly if at all because of the general reduction of tissue vitality and mitotic activity and an impeding of reparative processes in senility (see Bickerman (47)). Aged subjects in general experience greater difficulty in expelling fluids produced in the lung and so tend more to develop lobular atelectasis resulting from a blockage of small bronchioles. When this occurs the presence of numerous intervalveolar communications would appear to be distinctly advantageous as a means of collateral aeration of the obstructed lung units.

FIG. 7. Electron micrographs of alveolar wall, human lung. A., Epithelial cell body (EPCB) on upper surface of alveolar wall attenuates abruptly into a cytoplasmic prolongation (ATEP) which covers the underlying capillary (5,400 X). B., The epithelial cell and capillary of A at higher magnification to show greater detail at the point of attenuation. The distinction between attenuated epithelium (ATEP) and capillary endothelium (END) is best seen near the epithelial cell body where the tissue space (TSP) just beneath it is prolonged for some distance between the epithelium and the capillary wall (18,750 X). (From Low, F. N.: *Anat. Rec.*, **117**: 241-263, Oct. 1953. Courtesy, Dr. Frank N. Low, Louisiana State University School of Medicine, and Dr. Edmond J. Farris, Executive Director of the Wistar Institute of Anatomy and Biology, Philadelphia, Pa.)

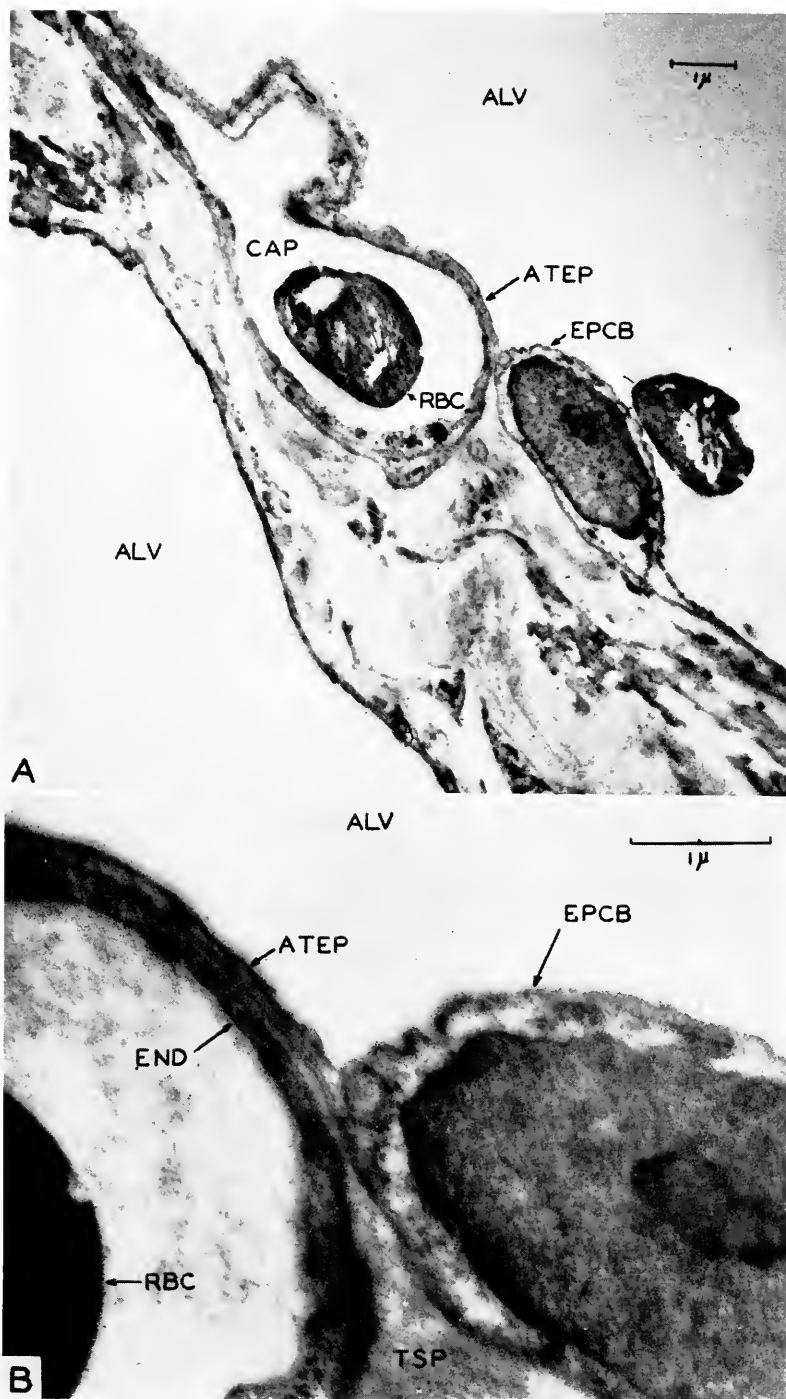


FIG. 7

Foam cells may be an intermediate stage in the production of the phagocytic "dust cells" which cleanse the terminal air spaces (devoid of cilia; mucus) of foreign particulate matter. The dust cells transport a large proportion of carbon particles et cetera proximally to the broncho-eliminative system which then carries the laden cells upward and out of the respiratory system. Foam cells and dust cells, arising as they do from the alveolar epithelium, are endodermal in origin. There is evidence that macrophages of mesenchymal origin are also present in alveolar spaces, but their numbers relative to endodermally-derived phagocytes, their mode of entry into the alveoli and possible differences in the behavior of the two cell types require further elucidation.

PRACTICAL CONSIDERATIONS

From the practical viewpoint the knowledge that there is a true respiratory epithelium is of far-reaching importance, for the rational basis for the treatment of disease must be founded upon a thorough appreciation of the structural details of the tissues involved. We should discard the notion that respired air normally enters connective tissue spaces; a situation described as "functional interstitial emphysema." Air and any foreign particles or infective agents which it carries with it, upon entering the alveolar spaces comes in contact not with mesenchymal elements of interalveolar septa, but with a filmy, sensitive and continuous epithelial layer. The latter, therefore, should be the first to give evidence of pathologic changes.

Alveolar epithelial cells are sensitive to a wide variety of organisms and foreign materials and so an intimate knowledge of their cytology and behavior in health and disease should be of great value to the pathologist and clinician. A frequent response of the alveolar lining under unfavorable conditions is an increase in cellular numbers and thickness so that a visible epithelium of cuboidal and even columnar cells may result. Several diseases which produce such a response have been mentioned (pneumonia, Hodgkin's, etc.). In the sheep-lung disease (*jagziekte*) there is thought to be a direct stimulation of the alveolar lining cells (39). A virus is suggested as the infective agent (38, 39). Adverse conditions such as contact with osmic acid or nitric acid fumes may cause multiplication of alveolar epithelial cells and a thickening of their cytoplasm so that a clearly visible membrane appears. These changes are said to occur rapidly in exposure to cadmium fumes (3). In some instances compression of lungs by pneumothorax produces a continuous cuboidal alveolar lining as does injection of oils and certain electrolytes into the pleural cavity. (See Rosin (37) for discussion and references.) According to Bell (39), in any disease in which there occurs a marked thickening of interalveolar septa with a displacement of the capillaries away from the alveolar surface (with loss of respiratory function) there may be hyperplasia to form a continuous alveolar epithelial lining. In this connection it is interesting that the adult lung *in vitro* rapidly dedifferentiates and its elements take on a fetal appearance; alveoli become quite small and are lined by thickened epithelial cells (45). Further tissue culture experiments and direct observation of alveoli in the lung chamber during their exposure to noxious agents may help furnish some insight into the mechanism and rate of membrane formation in disease.

It has been shown (25, 26, 46) that alveolar epithelial cells are quite sensitive to

osmotic imbalance in fluids to which they are exposed. This should be kept in mind when drugs are administered by the respiratory route through inhalation of aerosols, mists, etc., particularly if treatment is prolonged or often repeated. If the material reaching the alveoli is not isotonic with the tissue or the drug proves to be an irritant, alveolar epithelial changes may occur with consequences more serious than those of the disorder being treated.

In cancer of the lung the alveoli should not be overlooked as possible locations of primary lesions. The sensitivity of alveolar epithelium and its ability to rapidly form visible membranes and folded sheets of cells plus its tendency to revert to an embryonic type of structure when factors controlling normal growth are removed (tissue culture) warrant its careful consideration as a possible source of abnormal growths. The current interest in cigarette smoke as a possible factor in the etiology of lung cancer has led to vigorous research activities on the effects of smoke upon the epithelial linings of the airways. In such studies the alveolar epithelium, again, should not be neglected.

The significance of alveolar pores has been discussed earlier and requires only to be mentioned here.

It will have been noted in the foregoing sections that on nearly every point regarding finer pulmonary structure there are at least two and sometimes more views. These disputes need to be settled. We should know more about lung growth, alveolar phagocytosis, the pulmonary circulation, and the effects of aging upon pulmonary structure and function to mention just a few areas for study. The lung promises to be a fertile field of investigation for many years to come.

SUMMARY

1. The units of lung structure—primary and secondary lobules—are defined and the special features of bronchioles, respiratory bronchioles, alveolar ducts, alveolar sacs and alveoli are described.

2. Considerable attention is given to the century-old controversy of whether or not the pulmonary alveolus is lined by a continuous epithelial membrane—a true respiratory epithelium. The correct solution is of considerable importance from both academic and practical viewpoints. Although the evidence now available heavily favors the view that there is a continuous pulmonary alveolar epithelium, opinion, as expressed in various recent textbooks and other publications, is divided on the question. Accordingly the body of this paper is devoted chiefly to the assembling of direct and indirect evidence which supports the concept of an alveolar epithelium. Evidence is drawn from various areas of study including phylogeny, ontogeny, tissue culture, pathology and electron microscopy and from some investigations of the writer.

3. Various roles played by the alveolar epithelial cells are mentioned. The cells are quite labile and sensitive; they form the first line of defense against foreign particles and infective agents which may reach the alveolar spaces. They can be transformed into the large, free alveolar foam cells and the phagocytic dust cells. The latter provide the principal means of cleansing those airways which are not furnished with other mechanisms (cilia, mucus).

4. The demonstration of a true respiratory epithelium in pulmonary alveoli is of

practical importance to the pathologist and clinician. Among other things, it provides the anatomic basis for the epithelial proliferations which are found in a number of pulmonary diseases.

5. The need for further investigation of several features of pulmonary anatomy and physiology is expressed.

LITERATURE CITED

1. MILLER, W. S.: *The Lung* 2nd Ed., 222 pp., Charles C. Thomas, Springfield, Ill., 1947.
2. GRANCHER, J.: *Maladies de l'appareil respiratoire*, Paris (Cited by W. S. Miller, 1947).
3. MACKLIN, C. C.: The alveoli of the mammalian lung. An anatomical study with clinical correlations. *Proc. Inst. Med. Chicago* **18**: 18 pp. 1950.
4. LEBLOND, C. P. AND BERTALANFFY, F. D.: Reticulin membranes as the framework of alveolar lung tissue in the albino rat. *Canadian M.A.J.* **65**: 263-264, 1951.
5. HAYEK, H. VON: *Die Menschliche Lunge*. 289 pp., Springer, Berlin-Göttingen-Heidelberg, 1953.
6. MACKLIN, C. C.: Alveolar pores and their significance in the human lung. *Arch. Path.* **21**: 202-216, 1936.
7. LOOSLI, C. G.: Inter-alveolar communications in normal and in pathologic mammalian lungs. *Arch. Path.* **24**: 743-776, 1937.
8. LOOSLI, C. G.: The structure of the respiratory portion of the mammalian lung with notes on the lining of the frog lung. *Am. J. Anat.* **62**: 375-425, 1938.
9. VAN ALLEN, C. M. AND LINDSKOG, G. E.: Collateral respiration in the lung. Role in bronchial obstruction to prevent atelectasis and to restore patency. *Surg., Gynec. & Obst.* **53**: 16-21, 1931.
10. LINDSKOG, G. E. AND BRADSHAW, H. H.: Collateral respiration. The chemical composition and volume of the collaterally respired gases. *Am. J. Physiol.* **108**: 581-592, 1934.
11. DRINKER, C. K.: *Pulmonary Edema and Inflammation*. i-viii, 1-106 pp., Harvard University Press, Cambridge, Mass., 1950.
12. KRAHL, V. E.: The pulmonary alveolus of the newborn mouse. *Anat. Rec.* **109**: 54, 1951 (Abstract).
13. KRAHL, V. E.: Observations on the newborn mouse lung during initial expansion of the alveoli. *Anat. Rec.*, **112**: 51-52, 1952 (Abstract).
14. KRAHL, V. E.: The expansion of pulmonary alveoli in the newborn mouse. *Anat. Rec.* **115**: 448, 1953 (Abstract; motion picture demonstration).
15. KRAHL, V. E.: The expansion of pulmonary alveoli in the newborn. *W. Va. Med. J.* **50**: 11-16, 1954.
16. KRAHL, V. E.: Demonstration of terminal air passages and alveoli in fresh lungs of newborn mice. *Anat. Rec.* **118**: 427-428, 1954 (Abstract).
17. KRAHL, V. E.: The microscopic structure of the lung. Program, Twentieth Annual Meeting, Am. Coll. Chest Phys., San Francisco, p. 15, 1954 (Abstract).
18. KRAHL, V. E.: The expansion of pulmonary alveoli. *Bull. School of Medicine U. of Md.* **40**: xiv, 1955 (Abstract).
19. KRAHL, V. E.: Current concept of the finer structure of the lung. *A.M.A. Arch. Int. Med.* (in press) 1955.
20. COWDRY, E. V.: *A Textbook of Histology*. 4th Ed., 640 pp., Lea & Febiger, Philadelphia, Pa., 1950.
21. BOLK, L., GÖPPERT, E., KALLIUS, E. AND LUBOSCH, W.: *Handbuch der vergleichenden Anatomie der Wirbeltiere*. Bd. 3, 883-988, Urban & Schwarzenberg, Berlin & Wien, 1937.
22. HESSE, F. E. AND LOOSLI, C. G.: The lining of the alveoli in mice, rats, dogs and frogs following acute pulmonary edema produced by ANTU poisoning. *Anat. Rec.* **105**: 299-324, 1949.
23. LOOSLI, C. G.: Comparative study of respiratory portion of the lung. *Proc. Soc. Exper. Biol. & Med.* **32**: 693-695, 1935.

24. LOW, F. N.: The pulmonary alveolar epithelium of laboratory mammals and man. *Anat. Rec.* **117**: 241–264, 1953.
25. BREMER, J. L.: The protoplasmic films of the fat cell, the wall of the pulmonary alveolus and the renal glomerulus. *Anat. Rec.* **70**: 263–285, 1938.
26. BREMER, J. L.: Evidence of an epithelial lining in the labyrinth of the avian lung. *Anat. Rec.* **73**: 497–513, 1939.
27. WASSERMANN, F.: Experimenteller Nachweis der Membran der Fettzelle und ihrer Bedeutung für die Fettorgane als Wasserspeicher. *Zeitschr. f. Zellforsch. u. mikr. Anat.*, Bd. 26, S. 115–145, 1937.
28. STEWART, F. W.: An histogenetic study of the respiratory epithelium. *Anat. Rec.* **25**: 181–199, 1923.
29. PALMER, D. M.: The lung of a human foetus of 170 mm. C.R. length. *Am. J. Anat.* **58**: 59–72, 1936.
30. BARNARD, W. G. AND DAY, T. D.: The development of the terminal air passages of the human lung. *J. Path. & Bact.* **45**: 67–73, 1937.
31. CLEMENTS, L. P.: Embryonic development of the respiratory portion of the pig's lung. *Anat. Rec.* **70**: 575–595, 1938.
32. HAM, A. W. AND BALDWIN, K. W.: A histological study of the development of the lung with particular reference to the nature of alveoli. *Anat. Rec.* **81**: 363–379, 1941.
33. HAM, A. W.: *Histology* 2nd Ed. 866 pp., J. B. Lippincott Co. Philadelphia, Pa., 1953.
34. MACKLIN, C. C.: Pulmonic alveolar epithelium; Report of a round table conference. *J. Thoracic Surg.* **6**: 82–88, 1936.
35. BREMER, J. L.: Postnatal development of alveoli in the mammalian lung in relation to the problem of the alveolar phagocyte. *Carnegie Contr. to Emb.* **25**: 83–111, 1935.
36. PORTER, K. R., CLAUDE, A. AND FULLAM, E. F.: Study of tissue culture cells by electron microscopy; methods and preliminary observations. *J. Exp. Med.* **81**: 233–246, 1945.
37. ROSIN, A.: Studies on lung tissue in vitro with special reference to the nature of the lining cells of the alveolus. *Anat. Rec.* **97**: 447–469, 1947.
38. BONNE, J.: Morphological resemblance of pulmonary adenomatosis (jaagsiekte) in sheep and certain cases of cancer of the lung in man. *Am. J. Cancer* **35**: 491–501, 1939.
39. BELL, E. T.: Hyperplasia of pulmonary alveolar epithelium in disease. *Am. J. Path.* **19**: 901–911, 1943.
40. BENSLEY, S. H. AND GROFF, M. B.: Changes in the alveolar epithelium of the rat at birth. *Anat. Rec.* **64**: 27–39, 1935.
41. SWIGART, R. H. AND KANE, D. J.: Electron microscopic observations of pulmonary alveoli. *Anat. Rec.* **118**: 57–71, 1954.
42. LOW, F. N.: Electron microscopy of the rat lung. *Anat. Rec.* **113**: 437–449, 1952.
43. KARRER, H.: Personal communication.
44. LOW, F. N.: The electron microscopy of sectioned lung tissue after varied duration of fixation in buffered osmium tetroxide. *Anat. Rec.* **120**: 827–852, 1954.
45. CARLETON, H. M.: Growth, phagocytosis and other phenomena in tissue cultures of foetal and adult lung. *Philos. Tr. Roy. Soc. London, Ser. B*, **213**: 365–395, 1925.
46. BROWN, H.: Do the alveoli of the lungs possess squamous epithelium? Letter published in: *The Lancet*, **2**: 681, 1874.
47. BICKERMAN, H. A.: The respiratory system in the aged. pp. 562–613 in "Cowdry's Problems of Ageing," 3rd Ed. Edited by A. I. Lansing. 1061 pp., Williams & Wilkins Co., Baltimore, Md., 1952.

TOPICAL ANTICHOLINERGIC THERAPY—PRANTAL CREAM IN THE TREATMENT OF DERMATOSES: A PRELIMINARY REPORT*

HARRY M. ROBINSON, SR., M.D.

The literature contains an increasing number (1-8) of clinical reports on the successful use of anticholinergic drugs in the treatment of various skin diseases.

Dermatologic studies reported so far have employed oral or parenteral administration of cholinergic blocking agents. Therefore, when the first topical anticholinergic—Prantal cream 2 per cent†—became available, we were interested in evaluating this new method of therapy.

METHOD

Prantal cream 2 per cent was employed in therapy of 152 patients seen in private practice and at the Clinic of the School of Medicine, University of Maryland. Complete follow-up was not possible in 45 cases, therefore our series consists of 107 patients.

Dermatologic conditions treated and followed-up included: 22 cases of contact dermatitis; 24 of eczematous contact dermatitis; 21 of eczematous dermatitis; 31 of eczema of various types; 3 of dermatitis venenata; one of psoriasis; one of lupus erythematosus; 2 of onychia; one of scleroderma and one of folliculitis.

Of the 101 cases of dermatitis and eczema, 18 were complicated additionally by the following factors: 2 secondary infections, 2 dermatitis repens, one epidermophytosis, 3 pyodermas, 2 seborrheic dermatitis, 6 atopic and/or contact dermatitis, and 2 fungus and/or atopic dermatitis.

Each gram of Prantal cream 2 per cent contains 20 mg. diphehanil methylsulfate in a water soluble base. Patients were instructed to rub this agent lightly on the affected area 3 times daily. They were seen at weekly intervals, or oftener.

In order to rule out any possible therapeutic effect of the ointment base, 15 patients with symmetrical lesions were treated with Prantal cream base *placebo*. The similarly involved area on the same patients was treated with Prantal cream 2 per cent and results were compared.

RESULTS

Of 107 patients treated with Prantal cream, 80 (75 per cent) have shown improvement. Forty-two were entirely cleared of lesions, or were markedly improved, within two weeks; 16 were well within 1 to 3 months. Twenty-two improved and are progressing satisfactorily with continued therapy.

Erythema, allergic response, or sensitization was not observed following use of Prantal cream. However, 12 patients complained of slight burning or itching shortly

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† Prantal Cream 2 per cent—diphehanil methylsulfate 20 mg./Gm.—was generously supplied through the courtesy of the Division of Clinical Research of Schering Corporation, Bloomfield, New Jersey.

TABLE I
Results with Topical Prantal Cream 2 per cent in Dermatoses

Indications	Number Pts. Followed- up	Treatment Failures	Subjective Irritation	Healed or Markedly Improved —2 Weeks	Well in 1-3 Months	Progress- ing Satisfac- torily with Continued Therapy
Dermatitis:						
Contact	22	3	2	10	6	1
Contact and eczematous	24	2	4	13	2	3
Eczematous	21	2	2	5	3	9
Venenata	3	0	0	3	0	1
Eczema	31	6	3	10	5	7
Folliculitis	1	0	1	0	0	0
Onychia	2	0	0	0	0	2
L. E.	1	1	0	0	0	0
Psoriasis	1	1	0	0	0	0
Scleroderma	1	0	0	1	0	0
Totals	107	15	12	42	16	22

after application, and therapy was discontinued. Objective evidence of irritation was not observed.

Fifteen cases were classed as treatment failures. These included cases of contact dermatitis, eczema, psoriasis and lupus erythematosus.

Outstanding among the effects of Prantal cream 2 per cent was relief from pruritus—some within a few minutes after application. Patients are made comfortable, and scratching, which produces excoriation and further exacerbation of the lesions, is avoided. Danger of secondary infection is thereby minimized.

In addition, the anhidrotic effect of Prantal cream may aid in keeping lesions free of irritating sweat, thus preventing exacerbation and promoting healing.

Table I shows the full series in complete detail.

No effect was noted from Prantal cream base *placebo* employed in 15 patients with symmetrical lesions. The opposite area, treated with Prantal cream, responded in almost all cases.

No systemic side effects of an atropine-like nature were observed, or reported. Areas treated varied from a few centimeters in size, to areas including both legs and thighs.

DISCUSSION

The concept that parasympatholytic drugs might be helpful in treatment of various dermatologic conditions is derived from the clinical work of Grimson *et al.* (5), Brown and Sandler (6), and Nelson (2, 3).

Studying the effect of anticholinergic drugs on hyperhidrosis, Nelson observed good results in contact dermatitis, neurodermatitis, and dermatitis medicamentosa. He postulated that these conditions had been aggravated by excessive perspiration. The anhidrotic effect of oral Prantal was also of benefit to some patients with hyperhidrosis, nonspecific pruritus, and dyshidrotic eczema.

Parish (8) studied the use of Prantal tablets in poison ivy dermatitis. In a series of 73 patients, relief from pruritus was reported by some patients 8 to 12 hours after starting medication. Relief in all patients occurred in 24 hours. Diminution of weeping was frequently reported at 24 hours and was generally observed to be complete by 48 to 72 hours. Complete clearing of the lesions occurred in an average of 5 days on a dosage regimen of one tablet (100 mg.) 3 to 4 times daily.

Use of effective oral cholinergic blocking agents often results in some degree of atropine-like side actions, such as: xerostomia, mydriasis, urinary retention, constipation, and tachycardia. Side actions following oral use of the anticholinergic diphehanil methylsulfate (Prantal) are reported to be rare, and when seen are less severe than with other drugs of this class (9-12).

In 570 patients treated (13) with Prantal cream, transient and mild mydriasis was observed in only 3 patients in the entire group. In our own series, no atropine-like side actions were observed.

Frumess (14) has cited sweating, itching, flushing and excoriation as some neural effects produced by "acetylcholine released at parasympathetic nerve fiber endings." It is possible that topical Prantal cream blocks formation or release of acetylcholine at these sites.

SUMMARY

The reports in the literature on oral and parenteral anticholinergic therapy in dermatologic conditions are discussed.

Prantal cream 2 per cent, the first topical anticholinergic, was evaluated on 107 patients with various dermatoses. Eighty patients (75 per cent) were improved or completely healed; 42 patients (39.2 per cent) were markedly improved or healed in 2 weeks or less; 16 were well within 1 to 3 months; 22 improved and are progressing satisfactorily with continued therapy.

Erythema, allergic response, or sensitization was not observed following use of Prantal cream. However, 12 patients complained of slight burning or itching shortly after application and therapy was discontinued. Objective evidence of irritation was not observed.

Fifteen cases did not respond to therapy. These included patients with contact dermatitis, eczema, lupus erythematosus, and psoriasis.

In this series no systemic side effects of an atropine-like nature were observed or reported.

BIBLIOGRAPHY

1. SULZBERGER, M.D., AND WOLF, J.: *Dermatology: Essentials of Diagnosis and Treatment*, Chicago, The Year Book Publishers, Inc., 1952, pp. 512, 514.
2. NELSON, L. M.: Preliminary and short reports. Prantal in treatment of hyperhidrosis, *J. Invest. Dermat.* **17**: 207, 1951.
3. Nelson, L. M.: Preliminary and short reports. Prantal in dermatology, *J. Invest. Dermat.* **18**: 373, 1952.
4. ZUPKO, A. G., AND PROKOP, L. D.: Comparative study of Prantal and Banthine in hyperhidrosis, *J. Am. Pharm. A.* **41**: 651, 1952.
5. GRIMSON, K. S.; LYONS, C. K.; WATKINS, W. T., AND CALLAWAY, J. L.: Successful treatment of hyperhidrosis using Banthine, *J.A.M.A.* **143**: 1331, 1950.

6. BROWN, C. S., AND SANDLER, I. L.: Effective application of Banthine in dermatology, *Arch. Dermat. & Syph.* **64**: 431, 1951.
7. LUBOWE, I. I.: The use of a new anticholinergic agent, piperphenamine for the control of hyperhidrosis and associated dermatoses, *New York J. Med.* **53**: 2847, 1953.
8. PARISH, F. A.: Diphenmethanil (Prantal) methylsulfate. A new approach in the treatment of poison ivy dermatitis, *Ann. Allergy* **11**: 580, 1953.
9. HOFFMANN, C. R.: A clinical evaluation of diphenmethanil methylsulfate in the treatment of peptic ulcers, *Am. J. Digest. Dis.* **20**: 45, 1953.
10. D'IMPERIO, F.: Prantal methylsulfate in gastrointestinal diseases, *J. Med. Soc. New Jersey* **50**: 265, 1953.
11. HEINEKEN, T. S.: An evaluation of Prantal in ulcer management, *Rev. Gastroenterol.* **20**: 829, 1953.
12. RIESE, J. A.: Clinical comparison of four anticholinergic drugs, *Am. J. Digest. Dis.* **21**: 81, 1954.
13. Schering Corporation, Unpublished data.
14. FRUMESS, G. M.: The role of the emotions in dermatoses, *J.A.M.A.* **152**: 1417, 1953.

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LIQUID NITROGEN THERAPY IN DERMATOLOGY

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Cryotherapy has been used for many years as a means of treatment for some dermatoses and skin tumors. Pusey (1) was the first to introduce a method, using solid carbon dioxide (dry ice), for the treatment of verrucae, "nevi of all sorts" and senile keratoses. Dry ice has proved to be satisfactory and is still employed by some physicians for the treatment of hemangiomas, chronic discoid lupus erythematosus, and as "slush" (powdered solid carbon dioxide, sulphur, and acetone) in the treatment of acne vulgaris.

In 1899 Campbell White (2) recommended liquid air for the treatment of selected eruptions. Gold (3), and Irvine and Turnacliffe (4) also reported excellent results in the treatment of verrucae, keratoses and other superficial lesions. Kile and Welsh (5) recommended liquid oxygen for the treatment of warts, hemangionas, keratoses, leukoplakia and folliculitis keloidalis. Allington (6) and Hall (7) reported excellent results from their experiences with liquid nitrogen in the treatment of warts and keratoses.

This study was conducted to determine the value of liquid nitrogen as a method of cryotherapy in dermatologic therapy.

METHOD OF STUDY

Liquid nitrogen: Liquid nitrogen was obtained from the Air Reduction Center in liter thermos bottles. The cork stopper of the thermos bottle was grooved to allow the escape of the vaporized nitrogen and a small hole was bored in the plastic top cover for the same reason (figure 1). Liquid nitrogen is a colorless, odorless, liquid which constantly vaporizes. The temperature (boiling point at S.T.P.) of liquid nitrogen is -195.8°C . The use of liquid nitrogen is to be preferred over liquid oxygen (which has a boiling point of -182.9°C (-297.3°F)) and solid carbon dioxide (which has a boiling point of -78.5°C (-110°F)) because it is more readily available than liquid oxygen and unlike the latter, does not support combustion. Solid carbon dioxide requires pressure application and the depth of freezing with this material cannot be gauged accurately.

Method of application: Absorbent cotton was rolled on an applicator stick to form a large applicator with a fusiform appearance (figure 2). This was dipped in the container until saturated and applied by allowing the liquid nitrogen to drip on the lesion. The applicator was not applied to the surface of the lesion with pressure. Following the application of the liquid nitrogen to the lesion, the patients experienced burning sensations that lasted for several hours. One to three days following the application, the treated areas became erythematous, and edematous. A vesicle or small bulla formed followed by a crust in 5 to 7 days. The lesion usually became dry and peeled off in from one to three weeks. Some lesions were retreated two or three times. For small lesions a single application proved to be sufficient.

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FIG. 1. Container used. One liter thermos bottle with a hole bored in the plastic cap and a groove cut in cork stopper to allow the escape of vapor. A large fusiform cotton applicator is used for application of liquid nitrogen.



FIG. 2. Dip large applicator into flask until saturated, then allow the liquid nitrogen to drip on the lesion until it turns white. One such application should suffice for small lesions.



RESULTS OF TREATMENT

(Chart 1)

Excellent results were obtained in the treatment of various types of verrucae on all areas except the plantar surfaces of the feet. *Verruca vulgaris* (single or multiple), *verruca filiformis*, *verruca plana juvenilis*, and periungual warts responded to this method of treatment. Treatment with liquid nitrogen is superior to all other methods of therapy for periungual warts. An excellent cosmetic result was obtained in all patients treated. Plantar warts do not usually respond to this method of treatment

CHART 1

Disease	No. Patients	Successful Treatment	Unsuccessful Results or Recurrences
Verruca Vulgaris, single	342	320	22
Verruca Vulgaris, multiple.	104	84	20
Verruca Periungual.	15	11	4
Verruca Plana Juvenilis.	29	26	3
Verruca Filiformis.	13	12	1
Verruca Plantaris	9	3	6
Seborrheic Keratosis.	12	12	
Molluscum Contagiosum.	1	1	
Hemangioma	2		2

because of the fact that these are deep seated lesions. It is possible that if the applicator is applied with pressure, better results may be achieved. Seborrheic keratoses respond well to liquid nitrogen therapy and when the crust peels no visible scar remains. Two patients with hemangiomata did not respond to treatment with liquid nitrogen.

SUMMARY

1. Of 512 patients with various forms of verrucae treated with liquid nitrogen, 456 obtained excellent results and 56 did not improve or had recurrences.
2. Twelve patients with seborrheic keratoses responded to liquid nitrogen treatment and obtained an excellent cosmetic result.
3. Liquid nitrogen is a preferred method for the treatment of all types of verrucae other than plantar warts.

BIBLIOGRAPHY

1. PUSEY, W. A.: The use of carbon dioxide snow in the treatment of nevi and other skin lesions: J. A. M. A. **49**: 1354, 1907.
2. WHITE, A. C.: Liquid air in medicine and surgery: M. Rec. **56**: 109, 1899.
3. GOLD, J. D.: Liquid air and carbonic acid snow: therapeutic results obtained by the dermatologists: N. Y. M. J. **102**: 1276, 1910.
4. IRVINE, H. H. AND TURNACLIFF, D. D.: Liquid oxygen in dermatology: Arch. Derm. & Syph. **19**: 270, 1929.
5. KILE, R. L. AND WELSH, A. L.: Liquid oxygen in dermatologic practice: Arch. Derm. & Syph. **57**: 57, 1948.
6. ALLINGTON, H. V.: Liquid nitrogen in the treatment of skin diseases: Calif. Med. **72**: 153, 1948.
7. HALL, A. F.: Advantages and limitations of liquid nitrogen in the therapy of skin lesions: Presentation at meeting of American Dermatologic Association, 1955. Submitted for publication to the A. M. A. Archives of Dermatology.

CLINICO-PATHOLOGIC CONFERENCE

FROM THE CASE HISTORIES, UNIVERSITY HOSPITAL, BALTIMORE

Clinical History

Coming into the hospital in a wheel chair, this 51 year old white male informed the attending physician that he had been unable to speak properly for the previous 3 weeks. He knew what he wanted to say, but used wrong words which often had no connection with the thought that he wanted to express. During this three week period his vision was periodically blurred. He was weak but the weakness did not involve localized muscle groups. He had had no nausea, vomiting, convulsions, headache or loss of consciousness.

For 10 years this patient had been diabetic. This disease was well controlled by dietary restrictions and protamine zinc insulin. Three years before the present illness, an abdominal operation was performed to relieve him of intestinal obstruction. As a check, a "barium enema" and "chest plate" were done 2 weeks before admission and these were found to be normal.

The physician who examined him on his present admission found the patient to be afebrile, well developed and nourished, but lethargic. An odor of acetone was on his breath. His body temperature, pulse and respiratory rates, and blood pressure were normal. He was oriented with reference to time and place. His response to commands and questions was slow and uncertain. The right pupil was larger than the left; the extra-ocular movements were normal, and the visual fields were normal. There was no nystagmus. The retinal fields were normal to inspection. The pupils reacted to light and accommodation. The topognostic and stereognostic senses were disturbed on both sides. The patient was able to perceive light touch and painful stimuli. His proprioceptive sense was preserved. The deep tendon reflexes and cranial nerves were interpreted as normal.

A physical examination found the cervical structures to be free of pathologic changes. The trachea was midline and the thyroid gland was not enlarged. The chest was resonant. The breath sounds were vesicular and clear. By physical examination the heart was judged to be normal. A healed midline lower abdominal scar was seen. There were no masses, tenderness or rigidity. Cell counts and serologic test for syphilis performed on the blood were normal. The urine contained albumin and a trace of sugar. Roentgenographs of the chest and skull, and ventriculograms were done (Fig. 1). An electroencephalogram gave evidence of a focal destructive lesion in the left fronto-temporal region. The lesion was classified as an expanding lesion or infarct.

Two days after admission a craniotomy was performed to no avail. After operation, the ventricles were aspirated to remove bloody fluid under pressure. The diabetes was easily controlled. Consciousness did not return. Focal seizures of the right side of the mouth, neck and right arm recurred until death intervened on the eighth post operative day.



FIG. 1. A roentgenogram indicating the displacement of the ventricles to the right.



FIG. 2. A lateral projection of the ventricular system.

Clinical Discussion

Dr. J. G. Arnold: This patient's principal complaint, which had troubled him for three weeks before admission, was difficulty in speaking. Because speech is dependent upon many centers of innervation, both central and peripheral, do not attribute speech disturbances to lesions of a specific center, but analyze with care the plane at which this mode of communication is upset.

Intelligent responses depend upon an understanding of what is seen or heard, the ability to summon words which signify this understanding, the ability to motivate impulses that might lead to pertinent articulation, and an intact peripheral nervous system leading to organs capable of intelligible phonation. That this patient had a

lesion or lesions of the central nervous system seems apparent to me. That his auditory pathways functioned seems just as apparent. Beyond occasional blurring of vision, his optic functions were undisturbed. The fact that he comprehended what he saw and heard presumably excludes the possibility of a diffuse frontal lesion. It is proposed, therefore, that this patient's speech, at times awkward and slow and at others incoherent, was distorted by a lesion possibly involving the Broca's area. In addition to speech difficulties the stereognostic and topognostic senses were disturbed in this patient. One must not fail to consider the recognition of size, shape and weight, a function involving peripheral sensory conduction and intracortical associations, upon which memory and expression depend. Both of these faculties and the speech difficulty may be impaired by lesions involving the post central gyrus as it nears the temporal region and adjacent portions of the temporal lobe. Since this patient retained the ability to discern pain and heat the lesion is most probable at the cortical rather than at a lower level. The presence of stereognostic impairment in the absence of disturbed "position sense" surprises me because both of these abilities may be associated with the same cortical areas. Because stereognosis and topognosis, on both sides, and speech were disturbed, the patient must have had several cortical lesions. These I should place in both post central gyri and the left inferior frontal gyrus. There may have been others.

Multiple lesions of the brain cortex imply to me metastatic carcinoma, occlusive vascular lesions, and inflammatory lesions. The probable sources of the metastases in the brain are bronchogenic carcinoma, carcinoma of the alimentary tract, breast, kidney, prostate and female genital organs. If the patient had metastases, the colon is the first to be suspected because of his having had an operation for intestinal obstruction. At fifty-one years of age the most likely cause of obstruction is carcinoma. There is no evidence in this record to sustain a diagnosis of inflammatory disease of the brain. Because this patient's sickness was progressive, one is turned away from vascular factors.

It is my opinion that this patient had carcinoma of the colon and metastatic carcinoma of the cerebral cortex in the area mentioned above.

Dr. Robert P. Boudreau: The roentgenograph of the skull depicts a pineal gland and lateral ventricles which are shifted to the right. This shift is probably caused by a mass in the left temporo-frontal area.

Pathologic Discussion

Dr. J. A. Wagner: This patient was admitted to the hospital with symptoms pointing to brain tumor. During surgery a tumor was removed from the left temporal lobe. It was found to be metastatic adenocarcinoma. Since he had had a resection for carcinoma of the colon in February, 1949, the brain lesion is believed to be a metastasis from the original carcinoma of the colon.

The body is that of a well developed, moderately obese elderly white male. The head has been recently shaved and there is a skin incision in the left temporo-parietal region. There is subgaleal hemorrhage over the whole skull. A bone flap is found beneath the skin incision and there are two trephine holes in the occipital region.

The peritoneal cavity contains no excess free fluid. A few small, firm lymph nodes

are felt in the mesentery. The retroperitoneal nodes are markedly enlarged. They surround the aorta and are adherent to the vertebral column. Enlarged nodes are seen also about the pancreas, around the renal arteries and along the iliac vessels.

Old pleural adhesions are noted at the apex of the right lung. The heart weighs 500 grams. The myocardium is flabby. All chambers are dilated. The valves appear competent. The hilar lymph nodes are enlarged. They show caseation necrosis and anthracosis. A few minute nodules can be palpated in the lungs, especially in the right upper lobe. The pleural surfaces over both lungs are studded with many minute rounded white nodules. The nodules in the lungs and on the pleura are histologically similar. Most of them are made up of scar tissue. In a few, giant cells can be seen. Both lungs are congested and edematous.

The stomach and intestines are opened. No lesions are encountered proximal to the ileocecal valve. The mucosa of the colon is studded with countless tiny pinhead sized white nodules. When sectioned these nodules are found to consist almost wholly of fibrin which is adherent to the underlying mucosa. The point of previous resection cannot be determined.

Metastatic nodules are found in the left adrenal gland and in both kidneys.

An examination of the brain shows evidence of increased intracranial tension. Uncinate herniation is found on the left side. A recent operative cavitation which extends into the left parietal lobe is noted. This cavity, which measures 3.5 x 2 cm., is filled with freshly clotted blood.

This is a case of carcinoma of the colon with metastases to the brain, abdominal lymph nodes, kidneys and left adrenal. Metastatic tumors of the brain are not unusual. They can be frequently identified by their globular shape, their distinct demarcation and their frequent multiplicity. In the matter of metastasis to the brain, carcinoma of the lung is the chief offender, but metastases from carcinoma of the intestine, breast, stomach, kidney, adrenal and prostate must be considered in that order.

Anatomic Diagnosis

Adenocarcinoma, metastatic, left temporal lobe, brain (S.P. #70052, N.S. #3970); left temporal craniotomy, recent; occipital trephines, bilateral; uncinat hernia, left; subarachnoid hemorrhage, temporal left; metastatic carcinoma, retroperitoneal and iliac lymph nodes, kidneys, and left adrenal (resection, carcinoma, colon, February, 1949, in West Virginia); old granulomatous lesions, lungs and pleura, probably tuberculous; follicular colitis; cardiac hypertrophy and dilatation; acute pulmonary edema; benign prostatic hypertrophy.

OBSTETRICAL CASE REPORT*

Mrs. G. B. was a 24 year old, white, primagravida whose last menstrual period occurred on August 10, 1953. Her estimated date of confinement was May 17, 1954. Her prenatal course was essentially normal. She entered the hospital on May 20, 1954 in active labor. Labor progressed normally under sedation with Demerol and Scopolamine until the cervix was fully dilated and the presenting part was distending the perineum. Under saddle block anesthesia a full-term, living male child weighing 3200 grams was delivered with low forceps over a central episiotomy and without difficulty. Cervical inspection was reported as negative. While repairing the episiotomy, the operator noted that the patient was bleeding more freely than usual. This was attributed to uterine inertia. The uterus did seem a bit flabby at this time. She was treated with uterine massage and intravenous Pitocin with slowing of the bleeding. The repair was completed and she was returned to her room.

A routine inspection by the nurse about 30 minutes later revealed that she was still bleeding rather freely. Her pulse rate had increased from 88 to 100 per minute and her blood pressure had dropped from 110 systolic over 70 diastolic to 90 mm. of mercury systolic over 50 mm. of mercury diastolic. The obstetrician was immediately called and shortly expressed several large clots from the vagina using the cr  d   maneuver with Pitocin drip and fundal massage. In spite of this treatment bleeding persisted. She was given immediate transfusion and consultation was sought.

About 2 hours post partum a sterile pelvic examination revealed that the episiotomy wound had apparently extended well into the vaginal vault during delivery. Following the repair of the episiotomy the operator was not aware of the extension and had not begun his repair at the apex of the laceration. Consequently, the unrepaired vaginal laceration continued to bleed rather freely until it was discovered and subsequently repaired. The obstetrician suspecting uterine atony as the source of bleeding, delayed his investigation until he had lost valuable time treating the non-existent "uterine inertia".

WHAT CAN BE LEARNED FROM THIS CASE?

Post partum hemorrhage is still one of the foremost causes of maternal mortality. Blood loss associated with delivery must be stopped and must be replaced without delay. The errors in the above case were:

1. Failure to inspect the vagina thoroughly following delivery.
2. Failure to again inspect the vagina during the repair when the patient was bleeding freely.
3. Assumption that the bleeding was from uterine inertia and failure to investigate other important sources of post partum hemorrhage such as laceration of the uterus, cervix and vagina.

*From the case histories, Department of Obstetrics, University of Maryland, Baltimore.







MEDICAL SCHOOL SECTION

DR. WOODWARD RECEIVES HONORARY DEGREE OF DOCTOR OF SCIENCE AT FRANKLIN AND MARSHALL COLLEGE

Dr. Theodore E. Woodward, Professor of Medicine and a member of the class of 1938 was recently awarded a doctor of science degree by the Board of Trustees and Faculty of Franklin and Marshall College.

Dr. Woodward's citation stated that the award had been made "in recognition of his accomplishments as a physician, consultant, research specialist, medical adviser, and above all as a teacher in the most benevolent of all medical areas, preventive medicine."

The presentation of the degree by Dr. Elias H. Phillips, Secretary of the Faculty, was a part of the 168th year Convocation of Franklin and Marshall College at Lancaster, Pennsylvania.

FACULTY MEMBERS PRESENT PAPERS AT AMERICAN TRUDEAU SOCIETY MEETING

At the Eastern Section Meeting of the American Trudeau Society held on October 22 and 23, 1954 at Washington, D. C., Dr. Vernon E. Krah, Associate Professor of Anatomy at the School of Medicine, presented a paper entitled "The Finer Structure of the Mammalian Lung".

Dr. Edmund G. Beachum, Assistant Professor of Medicine, participated in a panel on the "Chemotherapy of Pulmonary Tuberculosis".

Dr. Otto C. Brantigan, Professor of Surgical Anatomy and Clinical and Thoracic Surgery, at the School of Medicine, is Chairman of the Eastern Section.

DR. HAYES MARTIN GIVES PHI DELTA EPSILON LECTURE

Dr. Hayes Martin, Associate Professor of Clinical Surgery at Cornell Medical College, was the 1954 Phi Delta Epsilon lecturer, an annual lectureship sponsored by the Delta Epsilon Chapter of the University of Maryland School of Medicine. Dr. Martin spoke on "Lesions of the Mouth, Diagnosis and Treatment". The lecture was given in Chemical Hall on Thursday, November 18, 1954 at 8:15 P.M.

TV-MD NOTES

PUBLIC SERVICE PROGRAM OVER WBAL-TV Sundays, 3 to 3:30 P.M. (EST)

The public service program, TV-MD, sponsored by the School of Medicine and the other professional Baltimore Schools of the University of Maryland, which began on September 26, 1954, continues into the 1955 season with the following programs for the month of January.

January

- 2 Man's Early Growth: The Skeleton.....Department of Orthopedics
- 9 Posture.....Department of Orthopedics
- 16 The Chemistry of Adolescence.....Department of Physiology
- 23 Acne: A Problem of Adolescence.....Department of Dermatology
- 30 The Adolescent Personality.....Department of Psychiatry

Refer to the Bulletin for subsequent programs.

MEMBERS OF STAFF PARTICIPATE IN AMERICAN ACADEMY OF GENERAL PRACTICE SCIENTIFIC ASSEMBLY

Faculty members of the School of Medicine recently participated in the 6th Scientific Assembly of the Maryland Academy of General Practice held at the Lord Baltimore Hotel in Baltimore on Thursday, October 21, 1954. Dr. J. Edmund Bradley, Professor of Pediatrics delivered a paper entitled "Regurgitation in Infants".

SCHOOL OF MEDICAL JOURNALISM AND MEDICAL WRITING ESTABLISHED

In a recent release through the American Medical Writers Association, America's only Association exclusively devoted to improvement of the written word of medicine, it is noted that the University of Oklahoma School of Journalism has established a 4 year course in Medical Journalism and Medical Writing. Similar courses have previously been established at the University of Illinois and the University of Missouri. The American Medical Writers' Association, with offices in the W.C.U. Building in Quincy, Illinois, for a number of years has maintained a medical manuscript editing service. Each year the American Medical Writers' Association holds an annual meeting and symposium on medical writing. The next meeting of the Association will be held at the Jefferson Hotel in St. Louis, Missouri on September 30, 1955. Physicians interested in medical writing and those who may desire special training in medical journalism should inquire further at the Association's offices in Quincy, Illinois.

MEDICAL LIBRARY NOTES

Gifts of books and journals were presented to the library by the following donors in the period from August first to November first:

- | | |
|-----------------------|---------------------------------------|
| Dr. George E. Bennett | Miss Patsy Miller (from the estate of |
| Dr. C. Reid Edwards | Dr. Meyer Miller) |
| Dr. Frank W. Hachtel | Dr. E. E. Nichols |
| Dr. Arthur M. Kraut | Mr. Karl Sussman |
| Dr. John F. Lutz | Dr. George Schimert |
| Dr. H. Boyd Wylie | |

The Armed Forces Medical Library in Washington gave to the University of Maryland, for its psychiatric and medical libraries, an interesting collection of books in psychiatry and closely allied fields.

Because of the extensive use of the *Annals of Internal Medicine*, the library needs more than the one set of this title to which it subscribes. Additional copies that alumni or other friends of the School of Medicine may be willing to give to the library will be most welcome.

Any duplicates of the *American Heart Journal*, volumes 1-42, would also be of use to the library which, through gifts, has maintained two sets beginning with volume 43.

The Medical Library has a most interesting display, made possible by a gift from Dr. John Wagner. Dr. Wagner presented the library with a reproduction in color of the famous painting of "The Surgeon General and His Cabinet," World War II. The copy is beautifully enclosed in glass and mounted in a small cabinet with a concealed light to illuminate the picture.

Around this picture, the Reference Department of the library has grouped individual photographs and biographic accounts of the two illustrious University of Maryland doctors included, Major General Norman T. Kirk, the Surgeon General, and Brigadier General Fred W. Rankin.



SCHOOL OF MEDICINE RECEIVES HEARST GRANT

The School of Medicine has announced the receipt of a grant of \$2,500 for furthering postgraduate medical study among the physicians of Maryland by means of television and other media. The check was accepted by Dr. T. B. Symons, Acting President, at ceremonies held at the school on Wednesday, July 14. Presentation was made by Mr. D. L. Provost, Vice-president and General Manager of the radio and television division of the Hearst Corporation. He was assisted by Mr. Leslie Peard, Manager of WBAL-TV and Mr. Fred I. Archibald, Vice-president of Hearst Consolidated Publications and publisher of the *Baltimore News Post* and *Baltimore Sunday American*.

DR. JAMES G. ARNOLD, JR. NAMED PROFESSOR OF
NEUROLOGIC SURGERY

Dr. James G. Arnold, Jr., formerly Associate Professor of Neurologic Surgery at the School of Medicine, has been recently named Professor of Neurologic Surgery and Chairman of the Department in an announcement issued through the office of the Dean of the School of Medicine. Dr. Arnold, one of the pioneers in the chemotherapy of infectious diseases of the central nervous system and an authority on the surgery of the spine and spinal cord, is well known to members of the Alumni Association and those intimately connected with the School of Medicine.

Dr. Arnold was born on December 27, 1904 in Atlanta, Georgia. He received his preliminary education at Furman University and the University of North Carolina from which he was graduated in 1925 with an A.B. degree. He received his Doctor of Medicine degree from the Johns Hopkins Medical School in 1929.

Following his graduation he served for 1 year as resident in tuberculosis at the Baltimore City Hospitals followed by an assistant residency and residency in medicine in the same institution. In 1932 he became interested in neurology and for the next 3 years served as a Hitchcock Fellow in neuropathology at the University of Maryland, becoming the first neuropathologist and one of the co-founders of this particular division of the School of Medicine. In 1934 he took post graduate studies



Dr. J. G. Arnold, Jr.

at the University of London in the National Hospital for Neurologic Diseases. For a number of years he practiced clinical neurology and was very active in the teaching of this specialty.

In 1939 Dr. Arnold became interested in neurologic surgery and joined the resident staff of the University Hospital serving first as assistant resident in general surgery and finally as resident in neurologic surgery, completing his training in 1942 and becoming certified by the American Board of Neurological Surgery in 1944. For a number of years Dr. Arnold was associated professionally with Dr. Charles Bagley, Jr. and assisted him in the development, expansion and organization of the Department of Neurologic Surgery. He has served successively as instructor, associate professor, professor and acting head of the Department of Neurologic Surgery, which position he held since 1952, following the retirement of Dr. Charles Bagley, Jr.

Dr. Arnold's scientific investigations have included some pioneer and original work concerning the use of sulfonamides in the treatment of pyogenic meningitis. His paper on the use of sulfanilamide in the treatment of streptococcal meningitis was one of the original contributions which heralded the chemotherapeutic era. In recent years his attention has been turned largely to problems of the spine and he has contributed a number of important papers and discussions to the knowledge of these complicated conditions. Dr. Arnold is also well known as an authority on neurologic diagnosis and as a most able consultant.

He is a member of the Medical and Chirurgical Faculty, the American Medical Association, the Southern Medical Association, the Harvey Cushing Society, the Southern Neurosurgical Society and the Southern Surgical Association.

DEAN ROWLAND DIES

Dr. J. M. H. Rowland, Professor of Obstetrics and Dean of the School of Medicine Emeritus, died on July 26, 1954 at the age of 87. Dr. Rowland's obituary will be found in the Alumni Association Section of The October, 1954 Bulletin.

DR. VERNON E. KRAHL JOINS BULLETIN STAFF

To Edit University of Maryland Biological Society News

Upon nomination of the University of Maryland Biological Society and with the approval of the Dean of the School of Medicine, Dr. Vernon E. Krahl, Associate Professor of Anatomy at the School of Medicine was nominated to the Associate Editorial Staff of the Bulletin of the School of Medicine. Dr. Krahl will edit the Biological Society Section which will hereafter be a regular feature of the Bulletin.

DR. LUTZ RETIRED

Dr. John Francis Lutz, Assistant Professor of Anatomy, retired July 1, 1954, after having served nearly three decades as teacher in the Medical School.

He is best known for his work in microscopic anatomy, to which he devoted 28 years of uninterrupted service. Teaching and the development of superior teaching materials were his forte. The student loan collections came under his purveyance

and accordingly were maintained at a high standard of excellence. Student, teacher and research worker rate these aids superior in quality, selection and preparation.

For many years and especially during World War II when good microscopes were not readily available to all students, Dr. Lutz's duties included the inspection of all kinds and makes of microscopes with a view of finding instruments suitable for student use. Students without new instruments brought hundreds of obsolete and antique microscopes to Dr. Lutz for inspection. The critical and detailed examinations given them often times disclosed valuable optical systems which, with minor adjustments and repair, could be put back into service and into the hands of deserving students.

Not all Dr. Lutz's time, however, was given to such routine matters, or to the teaching of Histology, Embryology and Neuroanatomy. He was an active member of a team of research workers who first determined the length of life of the red blood cell in the rat and in the monkey. Many of these experiments ran continuously (holidays and Sundays) for periods of six months at a time.



Dr. John F. Lutz

In the field of graduate education, Dr. Lutz was an able counselor and friendly critic—always conservative, but awake to the possibilities of the newest developments.

Academically, Dr. Lutz is a product of St. Johns College, Annapolis, where he received his A.B. degree in 1910, and of the University of Maryland School of Medicine from which he was graduated in 1914 with the degree of Doctor of Medicine. He served his internship and his residency in the University Hospital. In 1917 when America was at war with Germany, he offered his services and was commissioned a First Lieutenant in the Medical Corps. In this capacity he served his country until the close of hostilities in 1918.

Dr. Lutz was married to Anna Carlyle Robinson, R.N., who died in 1953. They have one daughter.

Dr. Lutz has retired from active duty as a teacher of medical students. He will accompany his daughter, Anne (Mrs. Charles G. Morgan), and her three children to Japan. There they will join Sergt. Morgan and Dr. Lutz's brother (Major Lutz) who are serving in the United States Air Force in that area.

We who know Dr. Lutz best do not see his retirement as the end merely of a long and valued teaching career, but rather as an assignment of leisure in which his maturity and experience will be needed just as much as before. His many friends, his colleagues and his students wish him well.

DEPARTMENT OF GYNECOLOGY

Dr. J. Mason Hundley, Jr., Professor of Gynecology, attended the meetings of the American Gynecological Club, when they were entertained by the Gynecological Visiting Society of Great Britain, Ireland, Scotland, and Wales from June 28 through July 17, 1954.

He also attended a meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons at Hot Springs, Virginia, September 8 to 11, 1954.

On December 14 Dr. Hundley will lead a discussion of *Indications for Hysterectomy* at a Breakfast Conference. On December 16 he will discuss *Vaginitis* at a Round Table Conference at the Sixth American Congress on Obstetrics and Gynecology to be held in Chicago, Illinois, December 13 to 17, 1954. He will also serve as presiding officer at a Sectional Meeting of the American College of Surgeons on February 22, 1955 in Cleveland, Ohio.

BIBLIOGRAPHY ON LABORATORY ANIMALS AVAILABLE

The Maryland Society for Medical Research has recently announced a valuable addition to the animal care literature in the form of a reference information file compiled by Dr. Jules Cass and Irene Campbell. This file is divided into three sections: Anatomy and Physiology, Care—Nutrition—Management, and Laboratory Techniques and Treatment of Diseases. The pertinent literature referring to each mammalian species commonly used in laboratory work, such as the dog, cat, hamster, and rat, is listed separately in each section. There are approximately 600 references to

various journals and monographs. Persons engaged in laboratory research using animals should find this compilation of considerable value. Inquiries concerning the file should be sent directly to Dr. Jules Cass, Kettering Laboratory, Department of Preventive Medicine and Industrial Health, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

SCHOOL OF MEDICINE HOST TO MASSACHUSETTS SOCIETY

The School of Medicine was host to the Clinical and Surgical Society of Massachusetts which met in Baltimore on April 21-22, 1954. Operative clinics and ward rounds along with a scientific session conducted by Drs. Harry C. Hull, John M. Dennis, R. Adams Cowley, Thomas R. O'Rourke, John Hankins and Arlie Mansberger was included in the program. The detailed Scientific Program is reproduced below.

Wednesday, April 21

1. Surgical rounds and operative clinics
2. Scientific session
 - a. Neck Lumps—Dr. Harry C. Hull
 - b. The Use of Radioactive Isotopes in Malignant Effusions—Dr. John M. Dennis
 - c. Cardiac Surgery (Motion picture)—Dr. R. Adams Cowley
 - d. Anatomic Considerations of Laryngeal Nerves in Thyroid Surgery—Dr. Thomas R. O'Rourke
 - e. Bicillin—A Statistical Study of Its Use in Surgical Infections—Dr. John Hankins
 - f. A Barbed Wire Pull-Out Suture for Tendon Surgery—Dr. Arlie Mansberger

SURGEON GENERAL'S PHOTOGRAPH ON EXHIBIT

MAY BE SEEN IN MEDICAL LIBRARY

Through the courtesy of the Commanding General of Walter Reed Hospital, a reproduction of the large oil painting of General Norman Kirk and his staff has been acquired by the School of Medicine. It is currently on view in the Medical Library. A photograph of this painting also has appeared in the Bulletin of the School of Medicine. Of particular interest are two University of Maryland Alumni. They are General Norman T. Kirk, class of 1910, who was Surgeon General of the United States Army during World War II and his Deputy Surgeon General, Doctor (then General) Fred W. Rankin, class of 1909 who was Deputy General in charge of Surgery. Dr. Rankin was recipient of the Alumni gold key and certificate for 1954.

ACADEMY OF GENERAL PRACTICE NOTE

Dr. Nathan E. Needle, Chairman of the Education Committee, has announced that the Sixth Annual Scientific Assembly of the Maryland Academy of General Practice will be held at the Lord Baltimore Hotel on October 21, 1954.

MERCY HOSPITAL NEWS

Dr. Charles E. Brambel, Director of the Biochemical Laboratory, attended The International Conference on "Thrombosis and Embolism" at Basle, Switzerland, July 20-24, 1954. His paper was prepared with the cooperation of Dr. Walter D. Wise, Chief of Surgery. In addition, Dr. Brambel gave a scientific exhibition at the Second International Congress of Cardiology held in Washington, D. C., September 13-17, 1954. He showed vitamin K as an antidote for anticoagulants as well as the mechanism and action of anticoagulants.

Dr. Edward Barczak, Resident in Gynecology, attended a course in Gynecology at the Massachusetts General Hospital held September 17-29, 1954. The course was given by Dr. Joe V. Meigs and his staff, and was sponsored by the Postgraduate Training Committee for Education at Mercy Hospital. This particular training is given to the residency staff at Mercy Hospital with all expenses paid by the hospital.

Dr. Leonard Hamberry, Co-Resident in Surgery, recently returned from the Lahey Clinic, having attended a course in surgery also sponsored by the Postgraduate Training Educational Committee at Mercy Hospital.

NEW ANAESTHESIOLOGIST

Dr. Elizabeth Y. Pahk, a native of Seoul, Korea, was recently appointed Medical Anaesthesiologist. After completing her pre-medical and medical training at the Seoul Women's College she interned at the Wesley Memorial Hospital in Chicago and remained there as Resident in Anaesthesiology. Later she served on the residency staffs of the Passavant Memorial and St. Luke's Hospitals in Chicago. At St. Luke's Hospital she was awarded a fellowship in Anaesthesiology. At the Robson County Memorial Hospital in Lumberton, North Carolina, she served as teacher and supervisor of residents and interns, and was also director of the Department of Anaesthesiology. Dr. Pahk, in addition to being certified by the American Anaesthetist Association, is also a member of the Society of American Anaesthesiology.

ARMED FORCES SECTION

Dr. James Russo, Chief of Anaesthesiology, was called to service in the Armed Forces on September 29, 1954. He is now stationed at the Brooke General Hospital in San Antonio, Texas.

Dr. Joseph T. Michels, Resident in Obstetrics, recently left Mercy Hospital for service in the Air Force. He is stationed permanently at McChord Air Force Base in the State of Washington.

Dr. Donald Carter, Resident in Otolaryngology left Mercy Hospital September 30, 1954 to serve in the Air Force.

Dr. John Heisse, Jr., Assistant in Surgery, has been appointed to take over the Residency in Otolaryngology.

UNIVERSITY OF MARYLAND BIOLOGICAL SOCIETY

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PROCEEDINGS

of the

University of Maryland Biological Society

The following is a resume of the meeting and program activities of the University of Maryland Biological Society for the academic years 1951-52 and 1952-53. Abstracts of papers presented at future meetings will appear regularly in forthcoming issues of The Bulletin.

Program for the Academic Year 1951-52

December 5, 1951. Annual Business Meeting. Bressler Lecture Hall, School of Medicine.

Chief items of business transacted included:

1. Election of the following officers for the year 1951-52:

President—Edward J. Herbst, Ph.D.

Secretary—Raymond M. Burgison, Ph.D.

Treasurer—Donald E. Shay, Ph.D.

Councilor—George P. Hager, Ph.D.

2. Election of 2 nominees to ordinary membership and 6 nominees to associate membership in the Society.

“The Action of Diisopropylfluorophosphate (DFP) on Chymotrypsin” by William H. Summerson, Ph.D., Biochemical Section, Medical Division, Army Chemical Center.

January 17, 1952. School of Pharmacy.

“Synthetic Theophylline Derivatives for Use in Hypertensive Studies” by John B. Harmon, M.S., Department of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland.

“A Further Study of Chloromethyl Intermediates in Preparation of Substances

of Pharmacologic Interest" by Wei-Chin Liu, M.S., Department of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland.

February 14, 1952. Dinner Meeting. Park Plaza Hotel.

"The Disappearance of Teeth after Local X-radiation of the Jaws in the Young Axolotl" by V. V. Brunst, Sc.D., E. A. Sheremetieva-Brunst, and F. H. J. Figge, Ph.D., Department of Anatomy, School of Medicine, University of Maryland.

"Sodium Pentobarbital Anesthesia and Mortality from Total Body X-radiation in C₅₇ (Black) Mice" by H. Patterson Mack, M.D., and F. H. J. Figge, Ph.D., Department of Anatomy, School of Medicine, University of Maryland.

"The Influence of Sulfonamides on Latent Periods of Methylcholanthrene Induced Tumors in Mice" by Geraldine F. Wolfe, M.S., and F. H. J. Figge, Ph.D., Department of Anatomy, School of Medicine, University of Maryland.

"Tumors in Monkeys" by F. H. J. Figge, Ph.D., Department of Anatomy, School of Medicine, University of Maryland.

March 20, 1952. Bressler Library, School of Medicine.

"Determination of Activity of Arterial Adenosine Triphosphatase" by C. J. Carr, Ph.D., F. K. Bell, Ph.D., and John C. Krantz, Jr., Ph.D., Department of Pharmacology, School of Medicine, University of Maryland.

"A New General Anesthetic—Isopropyl Vinyl Ether" by Go Lu, M.D., C. J. Carr, Ph.D., Mary Jane Fassel, A.B., and John C. Krantz, Jr., Ph.D., Department of Pharmacology, School of Medicine, University of Maryland.

May 22, 1952. Bressler Library, School of Medicine.

"Some Effects of Acute Decompression Stress upon Plasma Electrolytes and Renal Function in Unanesthetized Dogs" by F. P. Ferguson, Ph.D., and D. C. Smith, Ph.D., Department of Physiology, School of Medicine, University of Maryland.

"Some Effects of Acute Decompression Stress upon Plasma Electrolytes and Renal Function in Anesthetized Dogs" by D. C. Smith, Ph.D., and F. P. Ferguson, Ph.D., Department of Physiology, School of Medicine, University of Maryland.

Program for the Academic Year 1952-53

November 24, 1952. Annual Business Meeting. Bressler Library, School of Medicine. Chief items of business transacted included:

1. Election of the following officers for the year 1952-53:

President—Raymond M. Burgison, Ph.D.

Secretary—Frederick P. Ferguson, Ph.D.

Treasurer—Donald E. Shay, Ph.D.

Councilor—Edward J. Herbst, Ph.D.

2. Election of 8 nominees to ordinary membership and 29 nominees to associate membership in the Society.

"The Present Status of Medical Teaching and Research in Austria" by William R. Amberson, Ph.D., Department of Physiology, School of Medicine, University of Maryland.

December 16, 1952. Bressler Library, School of Medicine.

"The Inactivation of Diethylstilbesterol by Alkali" by Raymond E. Vanderlinde, Ph.D., Department of Biochemistry, School of Medicine, University of Maryland. (See abstract)

"The Effect of Estrogens and Estrogen Inactivation Products on the Pituitary Gland" by Raymond E. Vanderlinde, Ph.D., Department of Biochemistry, School of Medicine, University of Maryland. (See abstract)

January 21, 1953. Bressler Library, School of Medicine.

"Mucin Metabolism in Cystic Fibrosis of the Pancreas" by G. E. Gibbs, M.D., and M. M. Tilghman, M.S., Department of Pediatrics, School of Medicine, University of Maryland.

February 25, 1953. Bressler Library, School of Medicine.

"The Structure of Substances Which Affect the Autonomic Nervous System" by George P. Hager, Ph.D., Department of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland. (See abstract)

March 18, 1953. Bressler Library, School of Medicine

"The Expansion of Pulmonary Alveoli" by Vernon E. Krah, Ph.D., Department of Anatomy, School of Medicine, University of Maryland. (See abstract)

April 22, 1953. Psychiatric Institute Lecture Hall, School of Medicine.

"Effects of Drugs on Neuronal Metabolism. I. Studies on Malononitrile; Preliminary *in vitro* Investigations" by J. Mendelson, J. Hunt Mendelson, B. J. Fax, Ph.D., and R. G. Grenell, Ph.D., Psychiatric Institute, School of Medicine, University of Maryland.

May 20, 1953. Dinner Meeting. Psychiatric Institute, School of Medicine

"Intermediates in Fatty Acid Oxidation" by Albert L. Lehninger, Ph.D., Department of Physiological Chemistry, School of Medicine, The Johns Hopkins University.



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ABSTRACTS

CHEMICAL AND BIOLOGICAL STUDIES ON SYNTHETIC ESTROGENS.* By Raymond E. Vanderlinde, Ph.D., Department of Biological Chemistry, University of Maryland School of Medicine.

Part I. The Inactivation of Stilbestrol in Alkali

Zondek, Sulman and Sklow (1943) observed that sterile alkaline solutions of stilbestrol lost their estrogenic potency in three to four weeks. Smith observed in 1945 that such inactivated stilbestrol was still effective in causing a decrease in the transplantable gonadotropic potency of the pituitary of male rats. The purpose of this study was to isolate the alkaline inactivation products of stilbestrol with the hope of obtaining a non-estrogenic product that would show gonadotropic release properties.

Isodienestrol in 16-33 per cent yield was isolated from stilbestrol solutions of 1 mg/cc concentration in 0.02 N sodium hydroxide. Isodienestrol is only 1/600th as active as stilbestrol, and its formation indicates the mechanism whereby the estrogenic activity of such alkaline solutions is lost (Vanderlinde and Westerfeld—1949). Recently, this inactivation has been found to proceed further when carried out in solutions of 1 and 3 micrograms/cc of 0.001 N sodium hydroxide. No isodienestrol was recovered under these conditions but rather small amounts of three additional oxidation products. These are 4,4'-dihydroxybenzil, p-hydroxybenzoic acid, and an unidentified product isolated as an acetate melting at 157°. The latter compound has been assigned a tentative structure based on its ultraviolet absorption spectrum, infra-red spectrogram, and chemical analyses. Plans are in progress for its synthesis and proof of structure.

Part II. The Effect of Stilbestrol and Inactivated Stilbestrol Oxidation Products on the Pituitary

A partial report on the effect of stilbestrol and some of the inactivation products of stilbestrol on the pituitary has recently been published (Smith and Vanderlinde—1951).

The three main tests used to measure pituitary release properties are: (1) the intact mature male rat test involving subsequent pituitary transplantation into immature female rats (2) the enhancement of FSH in immature females (3) the inhibition of pituitary post-castration changes in spayed immature female rats. The estrogenic activity and results in these biological tests were reported for each of the five inactivation products. The 157° acetate in spite of being completely estrogenically inactive shows the same pituitary release properties in tests (1) and (2) as does stilbestrol, but unlike stilbestrol it does not prevent the post-castration rise in pituitary gonadotropins. A compound whose biological action is entirely one of stimulation, rather than stimulation followed by inhibition as is the case with active estrogens, is potentially a very useful tool in problems of infertility related to

* Presented December 16, 1952.

inadequate luteal function of the ovary. However, until the 157° acetate is chemically identified and some more practical means of preparing it devised, its biological properties will remain of more theoretical than practical value.

THE STRUCTURE OF SUBSTANCES WHICH AFFECT THE AUTONOMIC NERVOUS SYSTEM.* By George P. Hager, Ph.D., Department of Pharmaceutical Chemistry, School of Pharmacy, University of Maryland.

A working hypothesis concerning the relationship of structure and activity of substances which affect the activity of the autonomic nervous system has been drawn up. It is based on the orientation of functional groups and substituents in the molecules of various pharmacodynamically-active substances and on the known or assumed biological transformation of certain of the substances. In probing the hypothesis, two arylvinylamines have been prepared and subjected to preliminary pharmacologic tests. They were found to produce a fall in blood pressure and a stimulation of respiration.

* Presented February 25, 1953.

THE EXPANSION OF PULMONARY ALVEOLI.*† by Vernon E. Krah1, Department of Anatomy, School of Medicine, University of Maryland, Baltimore, Maryland.

The continuity of the alveolar epithelial lining is apparently lost about two-thirds of the way through gestation when pulmonary capillaries push to the alveolar surface. Some workers feel that the isolated epithelial cells then come to occupy spaces in the capillary meshwork, permitting direct exposure of the capillary endothelium to the alveolar air. Others hold that upon alveolar expansion, the epithelial cells are greatly stretched and that they retain their continuity through extremely thin protoplasmic expansions which extend across the alveolar surfaces of the capillaries. The extreme difficulty in demonstrating such films of protoplasm has led many to doubt their existence in normal postnatal lungs. In the present study it was found that not all pulmonary alveoli lose their continuous epithelium prior to birth but that for as long as a week following birth, the peripheral areas of the mouse lung exhibit areas of primary atelectasis. In an attempt to learn the fate of the fetal alveolar epithelium these peripheral alveoli were observed and photographed by cinemicrography while undergoing their initial expansion. The freshly-removed lungs were placed in a transparent chamber where they could be observed microscopically as they expanded under the influence of negative pressure. At the moment when the alveolus expands, its continuous epithelium appears to be completely disrupted so that naked capillaries come to lie at the alveolar surface. The isolated, residual epithelial cells then become the epicytes or septal cells which have been described in fixed stained sections of lung tissue. Small amounts of clear fluid, masses of tiny globules and large free cells resembling alveolar foam cells are often present in the atelectatic alveoli. The source, fate and the role played by this globular material and the free cells are being studied. The technique and some of the observations made during alveolar expansion are recorded on 16 mm. motion picture film.

* This work was supported in part by a grant-in-aid of the American Trudeau Society.

† Presented March 18, 1953.

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* July 1, 1954 to June 30, 1955

PRESIDENT'S LETTER

The medical profession and the present medical school admission requirements are attracting to our liberal arts colleges a vocationally minded group of students. Interest is centered only on those subjects which directly contribute to their future occupational objectives. This trend in education seems to pervade the whole undergraduate body no matter what the future occupation might be. Unfortunately the colleges themselves tend to encourage and often enforce this point of view.

The function of a liberal arts college is not to prepare students to make a living. It is to expose them to the opportunity of acquiring a liberal education after which medical school or any other professional school may come in due course of time. Acquiring a liberal education is the basic groundwork which fits the student for a good life and prepares him for future vocational training.

An advisory system or a worthwhile advisory relationship between students and the faculty could do much to produce the essential type of education needed. In the case of premedical advisers, not only advising students but preparing and transmitting recommendations to medical schools should be required. Where existent, advisory systems or advisers, for the most part, are associated with the departments of biology, chemistry or physics and unless the adviser has a thorough appreciation of the fact that a liberal education is the best preparation for medicine he will assume that it is the special province of his department. No teacher, therefore, can be a satisfactory premedical adviser, regardless of his department, unless he understands and respects the place in education of other subjects than his own. College teachers for the most part are specialists and many of them show a genuine understanding and respect only for their own subject. Building up one department at the sacrifice

of others by an adviser foils the purpose of the advisory system. Departmental over-emphasis in liberal arts colleges is trying to produce highly skilled physicians instead of liberally educated men.

Medical school officers and admitting committees could assist in the improvement of this condition by declaring their support of and insistence on a more liberal education. Liberal arts colleges could assist if they would stop questioning the sincerity of the declaration. We think it is true that students are admitted on the basis of merit and competence and not the basis of highly specialized training or grades. Grades are necessary, but at the present time grades in specialized subjects are foremost in the minds of liberal arts colleges, their advisers and most of the students.

Many medical schools in recent years have been listing "recommended" courses as well as required courses. Most of these recommended courses are in the sciences at the expense of the more broadening subjects. This practice should be stopped.

A broad liberal education makes for a well educated physician in a community. A culturally ignorant doctor is a greater menace than an ignorant person whose position is less respected. The profession must attract men of diverse abilities with a knowledge and appreciation of the humanities and social sciences. Pragmatic production-line vocationalism strikes at the cultural foundation of the profession. It does nothing to improve our knowledge of the past, our social or political fitness or our understanding of human action. It does, however, improve our socioeconomic status more quickly. Medical schools must decide whether they want potential cultivated doctors or science technicians; mature, responsible, socially informed individuals or the winners of high grades in science courses.

Medicine is an art, as well as a science, and the art is entitled to proper consideration by medical schools, liberal arts colleges and premedical advisory groups.

WILLIAM R. GERAGHTY, M.D.

GENERAL RICE NOMINATED FOR 1955 ALUMNI HONOR AWARD

TO RECEIVE HONOR AT ALUMNI DAY CELEBRATION JUNE 2, 1955

Major General George W. Rice, class of 1916 and a career medical officer in the United States Army was nominated recipient of the 1955 Alumni Honor Award and gold key at a recent meeting of the Board of Directors of the Medical Alumni Association. Dr. Rice will be the honored guest and will give the principal address at the alumni gathering which will take place on June 2, 1955. A biographical sketch of Dr. Rice will appear in the April, 1955 Bulletin.

MARYLAND ACADEMY OF GENERAL PRACTICE NOTES

DR. LOUIS G. LLEWELYN, CLASS OF 1935 NAMED PRESIDENT-ELECT FOR 1955

At the 1954 annual meeting of the Maryland Academy of General Practice, Dr. Louis G. Llewelyn of Pocomoke City, Maryland and a member of the class of 1935, was named President-Elect for the coming year. Also, at this meeting, Dr. William T. Layman, class of 1939 of Hagerstown was elected Secretary-Treasurer. Two Vice-

Presidents, Dr. Walter A. Anderson, class of 1929 and Dr. J. Roy Guyther, class of 1943 of Mechanicsville were also elected. Dr. Robert W. Farr of Chestertown, Maryland and a member of the class of 1934 was made a Director. Dr. Nathan E. Needle, class of 1930 was named a Delegate and to accompany Dr. Charles F. O'Donnell who has been a Delegate for several years. Dr. O'Donnell is a member of the class of 1944.

Following a clinical session and business meeting, the annual banquet was held at the Lord Baltimore Hotel. Dr. Edward J. Stieglitz of Washington, D. C. spoke, his topic being "A Toast to Age". Dr. Merrill M. Cross of Silver Spring, Maryland is serving as the Academy's President for the ensuing year. The scientific assembly for 1954 was under the direction of Dr. Lauriston L. Keown as Chairman with Dr. Charles F. O'Donnell as Co-Chairman. Committees included the following:

- Registration: Drs. William T. Layman, Merrill M. Cross, Katherine V. Kemp
- Lecturers: Lauriston L. Keown, Harold B. Plummer, E. Irving Baumgartner,
C. Rodney Layton
- Publicity: Mr. William J. Wiscott
- Hosts: Drs. E. Irving Baumgartner, William C. Harrison, Louis R.
Schoolman, Archie R. Cohen, Malcomb D. Phillips, Martin F.
Buell, Louis F. Klimes, George A. Moulton, Jr.
- Cocktail Party: Drs. George A. Knipp, Melvin B. Davis, Lawrence Maryanov,
Walter H. Shealy, Irvin G. Hoyt, G. J. Weems
- Banquet: Drs. Nathan E. Needle, Walter A. Anderson, Melvin N. Borden,
Henry G. Summers
- Music: Drs. James Frenkil, Joseph S. Blum, Hyman Schiff

ITEMS

Alumni recently elected to membership in the Maryland Academy of General Practice include Dr. Abram Goldman and Dr. John Charles Hyle of Baltimore, Dr. Gordon William Kelley of Hyattsville, Maryland and Dr. J. Ralph Horky of Churchville, Maryland.

Dr. Stanley E. Schwartz, class of 1941, has recently been certified in general surgery by the American Board of Surgery. Dr. Schwartz is currently engaged in the practice of general surgery at 420 Lincoln Road, Miami Beach, Florida.

Dr. I. Phillips Frohman, class of 1937, has been recently named Vice-Chairman of the Section on General Practice of the American Medical Association. Dr. Irving Baumgartner, class of 1931, is currently Secretary of the General Practice Group.

Dr. Frohman informs us that he plans an exhibit at the June, 1955 session of the American Medical Association based on a 12 year study of 2,300 cases of cervical erosion.

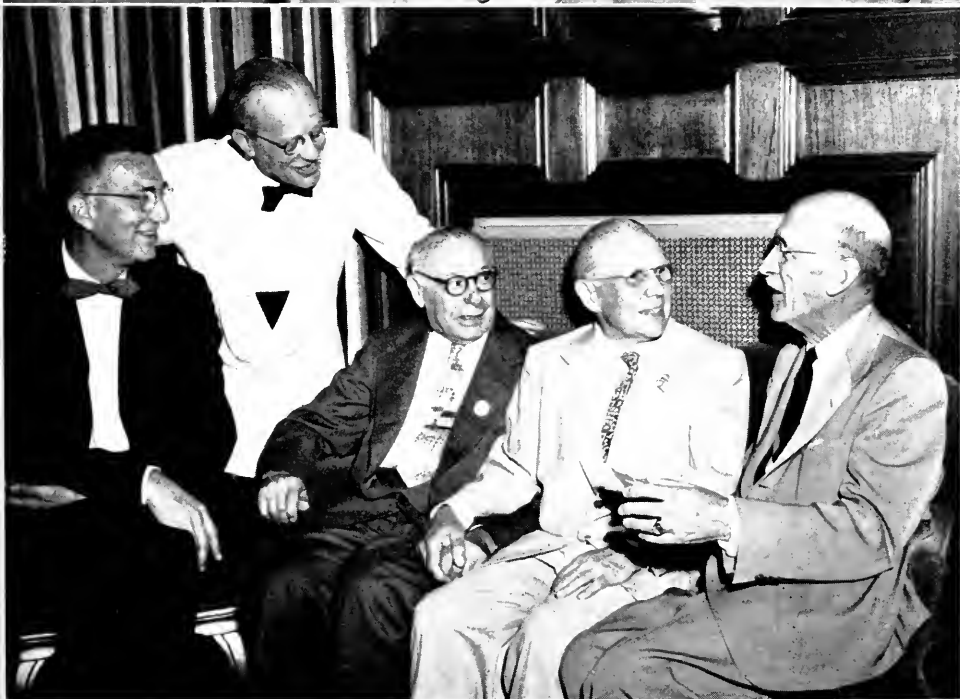
Dr. John F. Hogan, Jr., class of 1947, has announced the opening of his office at 7 East Preston Street in Baltimore for the practice of urology.

Dr. Stephen K. Padussis, class of 1948, has been called to active duty with the United States Army and is currently stationed at the Brooke Army Hospital in San Antonio, Texas.



Alumni of School of Medicine dine at St. Francis Hotel June 23, 1954

Class of 1950 celebrates at AMA convention. Left to right: front row: Dr. Knight, Mrs. Ibsen, Mrs. Demmy. Left to right: rear row: Dr. Ibsen, Dr. Righetti, Mrs. Righetti, Dr. Upton, Dr. Demmy.



Three prominent Alumni—Dr. L. H. Douglass, President, Medical Alumni Assn., Dr. W. W. Babcock, AMA medalist and Dr. Zack D. Owens, President, N. Carolina Medical Association

Dr. Babcock is congratulated by fellow alumni at the A.M.A. San Francisco meeting. Left to right: Dr. D. Frank Kaltreider, Dr. Howard M. Bubert, Dr. Harry M. Robinson, Sr., Dr. Babcock, Dr. Louis H. Douglass, President Medical Alumni Association

ALUMNI HIGHLIGHTS 1954 AMA MEETING—SAN FRANCISCO

DISTINGUISHED SERVICE MEDAL TO DR. WILLIAM WAYNE BABCOCK

Honored Alumnus Feted at A.M.A. 103rd Meeting

Dr. William Wayne Babcock, Emeritus Professor of Surgery at Temple University, a member of the class of 1893 and recipient of the Alumni Honor Award and Gold Key in 1948 was recipient of one of the highest honors in medicine, the American Medical Association's distinguished service medal.

This award, presented at the 103rd annual meeting of the A.M.A. on June 21 in San Francisco, is presented annually for outstanding contributions to medicine and humanity. Dr. Babcock received the award for the introduction of spinal anesthesia into the United States, for his pioneer work in surgery of the thyroid gland and in bone grafting; for the design of several surgical instruments, the use of stainless steel wire in abdominal wounds and for his educational activities. The latter included a large share in the development of the growth of Temple University and in the writing of a standard textbook of surgery.

ALUMNI DAY—1954

With registration totalling 166, Alumni Day was celebrated on the campus of the Medical School on Thursday, June 3, 1954.

The morning program was a varied one including presentations by some of the active researchers in the School of Medicine. Dr. R. Adams Cowley, class of 1944, presented a paper entitled "Intracardiac Surgery—A Motion Picture Demonstration". Dr. Robert E. Bauer, class of 1946, discussed "The Modern Therapy of Hyperthyroidism". Dr. Joseph B. Workman, class of 1946, presented a paper entitled "Radio Gold and Radio Phosphorus in the Management of Leukemia and Polycythemia Vera". Dr. John M. Dennis, class of 1945, and Professor of Radiology, discussed "The Use of Radio Active Gold in the Management of Patients with Malignancy and Effusion".

Following the scientific session the Alumni Honor Award and Gold Key was presented posthumously to the late Dr. Fred W. Rankin of the class of 1909.

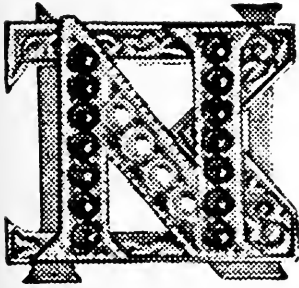
Highlights of the business meeting included the usual committee reports, and the reading of a somewhat extensive necrology roster. Attention was directed to the scheduled alumni dinner to be held in San Francisco during the approaching American Medical Association meeting and a similar feature reported as having been quite successful during the Southern Medical Association meeting last October. A resolution was unanimously passed urging the Board of Regents to take immediate steps to have Chemical Hall restored. The meeting closed with the annual election of officers.

Following the annual business meeting a complimentary luncheon was served to some 157 alumni in the new Recreation Room of the Psychiatric Institute.

During the evening the fifty year class was feted at the annual banquet attended by nearly 400 alumni and friends. Aside from the 24 fifty year graduates present, approximately 100 members of the class of 1954 were formally inducted as members of

the Alumni Association. Dr. Louis H. Douglass, President of the Medical Alumni Association, acted as toastmaster and Dean H. Boyd Wylie presented the honors to the graduating class.

NU SIGMA NU



Alumni and undergraduates joined to celebrate the 50th anniversary on May 8th, 1954 of the founding of Beta Alpha Chapter of Nu Sigma Nu. The program began in the afternoon with Alumni registration and a smoker from 3 to 5:30 P.M. Over 20 alumni visited the house and inspected the improvements which have been made largely through combined efforts of alumni and undergraduates. The annual banquet was held at 5:30 P.M. Dr. Karl F. Mech, class of 1935, who is currently serving as Faculty Advisor to the Chapter, was toastmaster. The banquet was followed by the

annual Spring formal dance held in the Grill Room of the Southern Hotel.



THE MEDICAL SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine; the old Hospital and the new Hospital; University of Maryland, are available. These white plates are 10 inches in diameter with the design printed in black.

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MEDICAL SCHOOL SECTION

LOUIS H. DOUGLASS, M.D.,
PROFESSOR OF OBSTETRICS
1937-1955

AN APPRAISAL OF LOCAL AND STATE ACTIVITIES

HUGH B. McNALLY, M.D.

To simply say that Dr. Douglass has enriched our community would, of course, be an understatement. Yet, to recite all of his accomplishments would necessitate a thorough search of the mind of this self-effacing, modest man. No one living can obtain a complete knowledge of the endeavors of an individual whose very nature is the embodiment of both charity and humility. Thus, any accounting of what Dr. Douglass has done for us will be incomplete. But we in Baltimore, do know that it is here he has lived and worked; here the scholar, teacher and scientist has made his career; and here he has been loved the most.

The title of Professor of Obstetrics at the School of Medicine, University of Maryland carries with it dignity and prestige. It has been made famous by Dr. Douglass. His own personal efforts in building this department are directly responsible for the now well-known superior quality of obstetrics taught at the school and hospital. His know-how has rubbed off on all who have trained under him and they, in turn, have passed this knowledge on to their students. Dr. Douglass has always prepared his men to be leaders and teachers themselves—witness the fact that fourteen of seventeen Baltimore hospitals have had or have now as their Obstetricians-in-Chief either him or those whom he has trained.

His private practice would be a story in itself. The countless patients who have come under his care constantly pay tribute to him for his professional guidance. His greatest achievement, however, lies in the fact that he has probably delivered more physicians' wives than any other local man. In addition, he has always been known as the obstetrician of the obstetricians.

Louis Harriman Douglass was graduated from the University of Maryland with the degree of Doctor of Medicine in 1911. His association with the school began immediately and has never been severed.

It was interrupted only by his term of service with the United States Marines during World War I. His duties in the Marines called him to the position of Chief of Medicine at his post. He was not kept busy and consequently was unhappy. He deliberately transferred to a busier service with a lower position. There is a picture of him somewhere in uniform. This picture has been the only way many have learned of his service to his country. His pride in this remains within him.

Two years after graduation Dr. Douglass was appointed Resident in Obstetrics at the University Hospital. Because of his ability and devotion it soon became apparent that his superiors were relying heavily upon him to supervise and handle all the service work in the institution. This was the foundation of what was to come.



FIG. 1. Here the Art and Science of Obstetrics was practiced with a warmth of heart

Upon his return from the service he again plunged into the work of the Department of Obstetrics and soon became its Chief of Clinic. The out-patient department presented a distinct challenge which he readily accepted. He surrounded himself with a faithful group of men who carried out his ideas and applied his principles for the better care of the indigent expectant mothers of our city and state. He set up his office to adjoin the clinic and was available at all times for consultation with his co-workers. It was always a comforting thought that advice and help was nearby from the oracle of obstetric wisdom. Here the art and science of obstetrics was practiced with a warmth of heart.

Dr. Douglass' main occupation in those early days can be summed up in the one word—work. Besides his rapidly growing private practice and his full day-every day efforts to build up his department he felt the necessity to take on other duties. He became Obstetrician-in-Chief of the Provident Hospital in 1929. This was another demonstration of his great interest in the welfare of the childbearing woman. The colored folks' hospital needed teaching and supervision. Despite the heavy burden of his other duties he held himself ready to help the staff with their obstetric difficulties. In 1931 the Maryland General Hospital called upon him for the same purpose and made him their Chief.

In 1934 when the great new general hospital of the Baltimore City Hospitals was opened, it was only natural that Dr. Douglass be appointed Obstetrician-in-Chief. This new maternity, the largest in the city, became the scene of a great deal of his work. He brought the students here and put them in a position to live and breathe obstetrics. He appointed a staff of experienced men to support him in this training and his house officers ranked with the best. This hospital took on a new meaning and commanded new respect through his work there. City and University training became synonymous because they both were supervised by Dr. Douglass. His



FIG. 2. Delivery Room

trainees would leave either of the two institutions and soon receive high positions of authority in other hospitals. A great tribute to a great teacher.

In 1938 the inevitable happened. Dr. Douglass was appointed Professor and Head of the Department of Obstetrics. With the coming of this event there were no revolutionary changes; the department simply continued to function, just as he had set it up many years before.

The years went by. A long line of physicians passed through the department for their training. Each received the personal interest of the "Chief." Each left a superior obstetrician and a better man. Each recalls his experience at the University with nostalgia. Each went on to greater things with a solid foundation grounded by Dr. Douglass.

The coming of World War II brought additional duties. He directed his teaching program eleven months a year in the accelerated instruction necessitated by the times. He accepted chiefship of District No. 2 of our local draft board. Hundreds of candidates for the armed forces were processed by him and his staff. He accepted and carried out this responsibility with the same quiet wisdom and fortitude which



FIG. 3. Dr. Douglass' Office

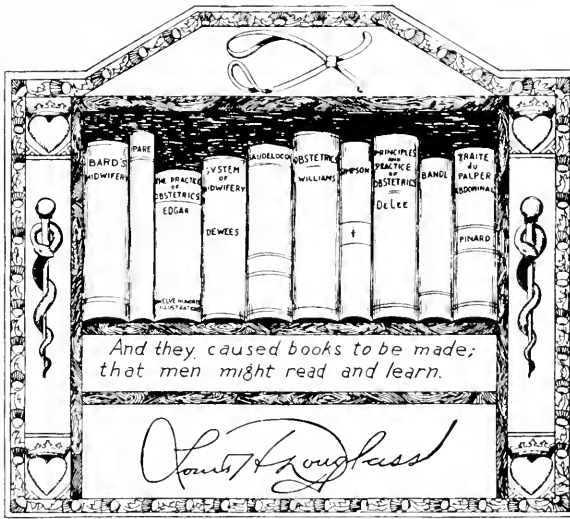
has characterized his entire life. At this time he saw many of his men go to war and, unable to obtain substitutes for them, he took upon himself the burden of their duties.

Through the years his career abounds with other professional and civic attainments—all characterized by a faithfulness above the call of duty. If he is named to a committee he is its most diligent worker. Active participation is his by-word. Medical meetings never want for his presence. No one hesitates to call upon him because he always seems to have enough time to devote himself to a new and worthy cause.

Our medical society has given him the highest honor it can confer—that of President. It has called upon him to serve in many other capacities; he has served on its Grievance Committee; he has been an expert witness for it; he has been, since its inception, co-chairman of its Maternal Mortality Committee. He has served as the chairman of the State Maternal and Child Welfare Committee. He is a member of the board of Directors of the Baltimore Rh Laboratory, which was organized by the medical society. He has been President of the Maryland Obstetrical and Gynecological Society. He always directed the state post-graduate educational program in obstetrics and has thus improved the standard of maternity care in our rural areas.

Such a man could not escape civic attainments. The States Attorney of Baltimore City has called upon him frequently as an expert witness. The Mayor of our City appointed him to the Jail Board. The Blue Shield called upon him to formulate their physicians payment plan. Our Executive Committee on Civil Defense is the recipient of his advice.

Here, living among us, is a man who has given much of himself and his energies



to the people of our city and state. He will continue to serve. He will continue to enrich the lives of all who know him. Once he praised one of his residents for some accomplishment with an added explanation that it is nice to give a man credit deserved now rather than wait until he is through. It is nice to pay tribute to such a man long before he is through but it is difficult to adequately do justice to any great man with mere words.

We who have lived and worked with you, Louis Douglass, salute you with much love and devotion.

EARLY RECOLLECTIONS

J. MORRIS REESE, M.D.

To be asked to write a short history of the early activities of Doctor Douglass, from the personal side, is a privilege indeed, and is an honor which is accepted with the deepest humility.

It was not my good fortune to have had the "Chief" as an Instructor—he being away on a tour of duty with the United States Naval Reserve during my third and fourth years of medical school. During the "Chief's" absence, most of the teaching in clinical instruction was given by Doctor L. E. Neale, who was a close personal friend of Doctor Douglass and his professor in Obstetrics. Doctor Douglass was honorably discharged from the Navy with the commission Lieutenant (Senior grade) and immediately resumed the practice of Obstetrics in Baltimore, as well as his teaching at the University of Maryland School of Medicine.

As the "Chief's" first Resident, many happy hours were spent with him and no one will doubt that this formative period played a great part in my future life, and I hope in the "Boss's" also. I am sure that the experience he had in breaking in a "green", confused externe definitely laid down a pattern for his future dealings with house officers.



FIG. 1

My first personal experience with Doctor Douglass took place on "Announcement Night" when, according to custom, the Senior Medical class gathered in the old Medical Building on Lombard Street, and received their announcements as to whether they would or would not receive the degree of Doctor of Medicine. Usually "spirits" were rather high on that night and this particular night was no exception! Having been fortunate in receiving a favorable announcement, the first person I met was Doctor Douglass. Throwing my arms around him, I announced in no uncertain terms that, "We will run the outside Obstetric department next year". Imagine me—not even a graduate of medicine having such temerity, but the "Boss," as usual, took it with a smile, congratulated me, and wished me well.

And then came my first year's tour of duty on the outside Obstetric service. This service which has since been discontinued, was a home delivery service which embraced all the area of South Baltimore. Imagine the problems which presented themselves with such a set-up. It further had its disadvantages in that it was completely apart from the so-called "inside hospital service", but over both services Doctor Douglass was Chief.

I can well remember the first forceps delivery which I attempted—green as grass and scared stiff—but the one comforting fact was that the "Chief" was at my elbow advising and suggesting in his usual self-effacing manner. That same Chief has in that same self-effacing manner guided the formative period of all his Residents since that first night in July, 1920.



FIG. 2

Needless to say, we had many abnormal and difficult pathologic cases brought in from outside, and obstetrics was taught and learned the hard way—by a trial and error method and learning to do by doing. The obstetric dispensary was in the basement of the old hospital, manned by Doctor Douglass, his Secretary and myself. Here patients were seen, examined and advised in the crude manner of those days. For instance, routine blood examinations were unheard of, patients were seldom, if ever, weighed and blood pressure determinations were done only if the patient presented any untoward symptoms. Roentgen ray pelvimetry was unheard of and routine chest examinations for the pregnant woman were rarely, if ever, done. Even flat plates of the abdomen were avoided to a certain extent because of the supposed danger of roentgen ray on the unborn child. Patients were admitted to the hospital only as a last resort, generally only if they had been in protracted labor in the homes. Contrast that dispensary and home delivery service with our present set-up where patients receive *every* possible safeguard in prenatal care and delivery. The evolution of this was not rapid, but slow and gradual, and resulted from the combined efforts of everyone in the department with Doctor Douglass acting as the moderator, and in most cases, making the pertinent suggestions which led to the beneficial changes.

The maternity in those days was on the second and third floors of a special wing

over the nurses' dining room, adjacent to the engine room and powerhouse. The private accommodations were most meagre, and the service wing consisted of two-twelve bed wards for white and colored patients respectively. There was no elevator for the ward service, and patients had to be carried down a winding stairway for any operative procedure which was necessary. All Caesarian sections were performed in the main operating room of the hospital, and long and tedious delays were encountered because of the fact that the operating rooms were being used at that time. Blood transfusions were a rarity and blood banks were in the far distant future as were antibiotics and sulfa drugs. In such surroundings, clinical obstetrics was taught to both house men and students. The private patients were so few, that in 1928 the private service was discontinued entirely and all maternity service was given over to ward patients. Here, clinics were held and pathologic patients were discussed and operated upon. To keep the maternal mortality low, we had to exercise eternal vigilance at all times. Here the "Chief" spent unnumbered hours, day and night, supervising and assisting, and it was my privilege to be associated with him in these conferences. Then, of course, when the new hospital was opened, the physical conditions changed completely. At last there was sufficient room temporarily to supply the needs of the ever growing and ever expanding dispensary and out-patient delivery service.

Dr. Douglass, because of his many and varied duties in connection with his medical life, had little time for the frivolous aspects of living. He lived, at that time, in York Court, and was surrounded by an immediate group of close personal friends. This group was one of the most closely knit organizations which I have ever beheld, and regularly met at one another's homes to play penny-ante. Later the penny-ante game was discontinued and auction bridge was substituted. Still later, of course, the group dispersed because of changed conditions, but the "Chief" still, to a certain extent, continued the custom of regular "bridge nights" with a select group of Doctors and close friends.

Dr. Douglass was a hunter of parts and regularly went on "Safari" to the tide-water lands of the Eastern shore of Virginia to hunt elusive geese and ducks. Headquarters was a shack on "The Island" and if the tall tales which the "Chief" brought back after each hunting expedition can be believed, it was a time for gaiety and hilarity mixed with a more serious pursuit of duck hunting. Strange to say, however, the amount of game which was brought back was always rather small—so draw your own conclusions!

Another favorite past-time was quail hunting and was done for the most part on the Eastern shore of Virginia. The "Boss" also owned one of the most precocious Irish setters in existence, and the few times I personally hunted with him for quail were a source of constant amazement that such a large dog as "Bob" would hunt anything from a snow bird to a cow, and was perfectly happy in so doing. The last time I saw "Bob", he was chasing a rabbit over a hill about a mile away in spite of all vocal efforts by the "Boss" to bring him back. This was the last I saw of "Bob" for he never returned from that particular rabbit chase!

During the off-season when there was no hunting, the "Boss" indulged in skeet shooting—a form of clay target shooting. He was a charter member and long-time



FIG. 3

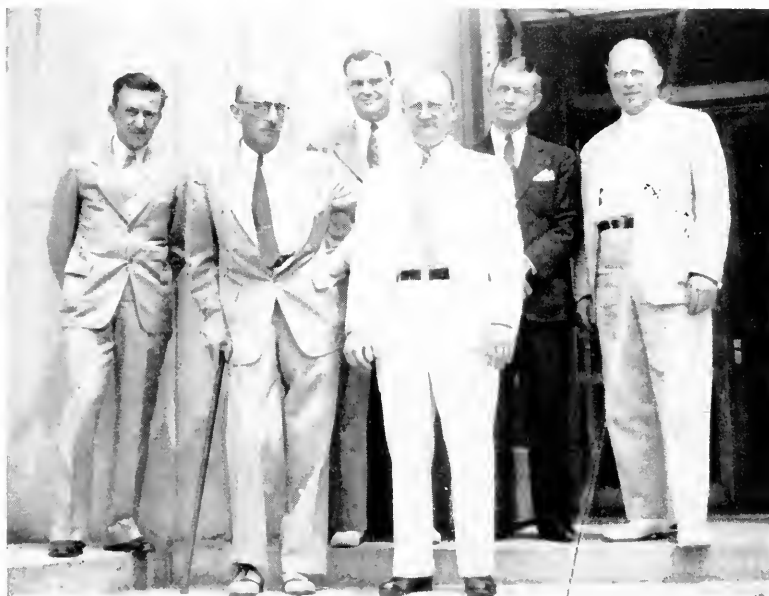
Treasurer of the Towson Gun Club which was the first club in Maryland to introduce skeet shooting. Knowing the iron-clad control and the apparent entire lack of nerves which the "Boss" has always exhibited, it was always a paradox to find that at the end of a round of competitive shooting, he invariably had a goodly number of unfired shells because he was one of the most constant flinchers in the game. The "Boss" always looked on skeet shooting as a method of complete relaxation and did not fancy the fierce competition which developed in skeet in later years. I truly believe that the hours which he spent on the skeet field with the tyros and non-competitive shooters were some of the happiest of his life. He preferred always a twenty gauge gun and when not in competition, did an excellent job of breaking targets.

He also was a fisherman, and during his vacations spent in Virginia, enjoyed that sport to its fullest extent. Unlike most fisherman, he ate what he caught, but how anyone could enjoy boiled fish is beyond my ken! I am sure the "Boss" will never forget, and I know I won't, the time that he came back from one of his vacations with both legs so sunburned that he had to use crutches. He failed to remember that you can become sunburned in cloudy weather, and went fishing with his pants legs rolled up to his thighs, developing third degree burns from his mid-thighs down.

On one occasion, Dr. Douglass decided that he would play golf and procured the finest set of clubs and equipment which could be had. After three trials on the golf course, he gave it up completely. Why?—because on each of these three occasions he had gotten a call from the caddy master that his services were needed at the hospital, and obstetrics came first!



FIG. 4

*"Early Staff Members—Baltimore City Hospitals"*

Left to right: DR. JOHN HAWS, The "Chief", DR. HUGH B. McNALLY, The Author, DR. JOHN SAVAGE, AND DR. M. P. JOHNSON. The "Chief" is using his cane because of the burns mentioned in this writeup.

He was a rather avid baseball fan and spent as much time at the old Oriole Park as he possibly could take from a busy practice.

As a hobby, if the "Chief" had any hobby aside from Obstetrics, he indulged in woodworking and cabinet work and his basement held a plethora of woodworking machines and instruments. It was never difficult to procure a Christmas present for the "Boss". Some type of lathe, saw, etc. was always acceptable and was frequently given. His mechanical ability was one of the highest type and he had many gadgets and gismos in his tool box. Many times he performed minor repairs on the various machines, electrical appliances, etc. in the department. He, on frequent occasions, made various wooden gun cases, tables, electrified old lamps so that they could be used, etc. and did this type of work as a diversion from the stern practice of obstetrics.

Dr. Douglass' mechanical skill was best exemplified by the amount of work he had to do on one of his early automobiles—a sleeve-valve Willys-Knight. The "Boss" always stated, "She is mechanically perfect." To my personal knowledge the Chief should have had a mechanical engineer's degree instead of the degree of Doctor of Medicine, for it took all of his skill and ability to keep her in running order. I still think, however, that this car more nearly suited him than any other which he has ever owned.

Recognized now as a leader not only in local, but also in national obstetrics, Doctor Douglass early exhibited the characteristics which have so distinguished him as an outstanding teacher and practitioner. Working hand in hand with the Baltimore City Health Department, Doctor Douglass established the early prenatal clinics which were so needed in the City in the early days. He worked with the Commissioner of Health to help lay the foundation for the present Bureau of Maternal and Child Hygiene and his interest has continued unabated to this time. Dr. M. A. Novey, a former Resident of Dr. Douglass' at the University Hospital, was the first full-time Chief of this division and Dr. George Davis, upon Dr. Novey's death, became head of this Department on a part-time basis.

When the plans for the present City Hospitals were being discussed, it was Dr. J. M. H. Rowland, Dr. Douglass' immediate predecessor as Professor of Obstetrics, and Doctor Douglass who were called in to lay out the plans for the maternity pavilion. On the completion of the building, Dr. Douglass was made Chief of the Department and has remained in that position to the present time. The administration of this Department has been a tremendous undertaking, but as in all things that Dr. Douglass has attempted, he has, in so far as I am concerned, made the operation a complete success.

Never was Dr. Douglass too tired or too busy to appear before any group of interested persons if he thought by that appearance obstetrics in general would be bettered. He was one of the founders of the present Maternal Mortality Conferences which have become so helpful and beneficial in determining the reasons for maternal mortality. These conferences were patterned after the ones which were inaugurated in Philadelphia by Dr. Philip Williams, and Dr. Douglass, with others completely studied that set-up before starting the one in Baltimore. In a similar manner, the State Maternal Mortality Committee was set-up for reviewing all maternal deaths

which have occurred in the State. Dr. Douglass has been Chairman of that committee since its inception. This is but one of the agencies either started or aided in its early life by the "Boss."

In disseminating obstetric knowledge, the "Chief" also has gone out of his way to help the cause. Well do I remember the series of lectures and conferences which he conducted in the state of West Virginia during the summer months for several years in the late thirties. During these seminars, which lasted for four weeks, Dr. Douglass was completely away from Baltimore traveling from one town to another in West Virginia and holding one day sessions with local physicians. It was an onerous job, but one which paid dividends in a big way.

Further activities of Dr. Douglass included Chief of the Obstetric service at the Franklin Square Hospital and Chief of the Obstetric service at the Maryland General Hospital. At the time that he headed the department at Franklin Square, the maternity was located in a converted dwelling which occupied the space that the present new maternity building occupies. The physical property, as you can well imagine, was anything but the finest, but in spite of these terrific handicaps, Dr. Douglass reorganized the department as well as the house service and put the Obstetric Department on a sound basis. He resigned because of work pressure at the new University Hospital. While he was Chief at the Maryland General Hospital, he also put the department on an excellent basis. His influence is carried over at the present time at Maryland General Hospital in the person of Dr. D. M. Dixon, a former Resident at the University Hospital, who presently is the Chief of that department.

Dr. Douglass has been Consultant at the Provident Hospital since it was taken over by the present management, and has organized the maternity on the same sound basis as the other hospitals with which he has been associated. At the present time, he spends the better part of one day a month at staff conferences at the present hospital.

The "Chief" was not noted in the early days as being too much of a diplomat. He hesitated to soften any statement by a useless expenditure of words, but at the same time the advice given was always the best and after the advice had been given, a pertinent reason for his decision was always forthcoming. He had the courage of his convictions and he definitely believed in stating these convictions with the least possible use of words. Here his Scotch ancestry was demonstrated as well as in some of his other dealings. The "Boss" never believed in useless expenditure of money. Certainly he was *never* penurious, but on the other hand, he believed in a dollar value for one hundred cents. In fact between the two of us, we had just about every commodity covered in the wholesale field and we exercised that advantage on numerous occasions!

It is a bit unusual that Dr. Douglass was born on Christmas Day so that the entire world celebrates his birthday. The Department, when the Obstetric Dispensary was in the basement of the building on Greene Street, always got together at Christmas and had a rare old time. I am sure the "old timers" can remember some of the highlights of those parties, as for instance—when one of the senior staff men developed hysterics while watching the attempts of one of the secretaries to do a solo ballet! I am sure that some of the firm foundations upon which the present day obstetric department is built was put down during that period.

"Boss" was a complete teetotaler and because of this, a most ludicrous experience was perpetrated on him by one of the staff men. A beautifully typewritten letter supposed to have come from a Negro minister on Whatcoat Street was received by the Chief in which it was stated that the minister was preaching a series of sermons on the evil of drink. Unfortunately Elmer, the subject which the minister was using as a horrible example of drinking had recently died, and the minister was making Dr. Douglass an offer to take Elmer's place. He was to receive no financial remuneration, but would be completely in the state of drunken stupor when he appeared on the platform. It was a long time before Dr. Douglass found out who really sent the letter. He had in his own mind blamed a certain prominent ophthalmologist for sending the letter, and he had planned a comparable practical joke in return.

It was during the early period of Dr. Douglass' stewardship that his interests in his own men became definitely manifest. At all times, Dr. Douglass held himself in readiness to advise and to counsel his Resident staff, not only from the professional angle, but also from the personal side. He could forgive an honest error in judgment, but never condoned procrastination. His interest has continued unabated during the years and frequently the "Boss" receives letters, personal communications, and phone calls from the ex-house men located throughout the country. This, I think, demonstrates the complete confidence which each and everyone of the ex-house staff has in the "Chief," and I know that obstetrics throughout the country has been lifted to a higher plane because of the timely advice and counsel which the "Boss" has always so readily given.

AN APPRECIATION OF DR. LOUIS H. DOUGLASS

PHILIP F. WILLIAMS, M.D.*

Those of us living outside the state of Maryland appreciate Dr. Louis H. Douglass for varied reasons. His modest demeanor, his fine sense of humor, his willingness to help, and his warm personal friendliness make him a perfect Southern gentleman to his admirers.

His Annual Obstetric Report, as Chief of an outstanding teaching institution and large clinical service, shows us, in the meticulous detail of the presentation, the continuous, careful and competent oversight he must give his work. We are constantly stimulated to match his low morbidity and mortality rates.

The men he sends from their residencies to our distant communities exemplify by their good judgment and excellent technic, the influence of the man to whom they owe their graduate education and training.

Dr. Douglass has been an outstanding leader in the successful campaign to lower maternal mortality. The State of Maryland Plan, for the analysis and correction of avoidable factors, is regarded as the best yet devised for use in a rural community.

He was a valuable asset in the work of the National Federation of Obstetric and Gynecologic Societies, organized, frankly, as an anti-unfavorable legislation. Dr. Douglass shared in the defeat of the Pepper Bill, which would have perpetuated the Emergency Maternity Infant Care Act of World War II.

When the need for the Federation no longer existed, Dr. Douglass was a strong

* ED. NOTE: Dr. Williams is Professor Emeritus of Obstetrics and Gynecology at the University of Pennsylvania and the University of Pennsylvania Graduate School of Medicine

supporter of the movement which resulted in the reconstitution of the Federation into the present American Academy of Obstetrics and Gynecology.

His selection as Chairman of the Section of the American Medical Association in Obstetrics and Gynecology was a tribute in recognition of the valuable services he had rendered to his specialty and to the profession as a whole.

For his legion of friends in the State of Pennsylvania, I salute Louis H. Douglass on this occasion.

March 3, 1955

To The Members of the Alumni

University of Maryland

School of Medicine

If one considers the demands made upon the time and services of the professional man, probably the life of the obstetrician presents the need for the most unrelenting hourly, daily, and year in and year out attending to the patients' demands. The rewards for such a life comes from the opportunity of assisting in the births and sharing the joys of the families blessed with children. When this opportunity is combined with the desire for improvement of the profession one has chosen and this is coupled with a devotion to impart the new information obtained and the judgment gained through experience, to others seeking to become physicians—then indeed it is a full life. Dr. Douglass has for more than thirty years excelled in these roles. He has professionally influenced and inspired many individuals, and all who know him hold him in great respect. I am pleased to be allowed to share my views with you in this issue of the BULLETIN and to express the hope that Dr. Douglass will continue to be our advisor and counselor.

William S. Stone, M.D.

Director of Medical Education and Research

DR. LOUIS H. DOUGLASS

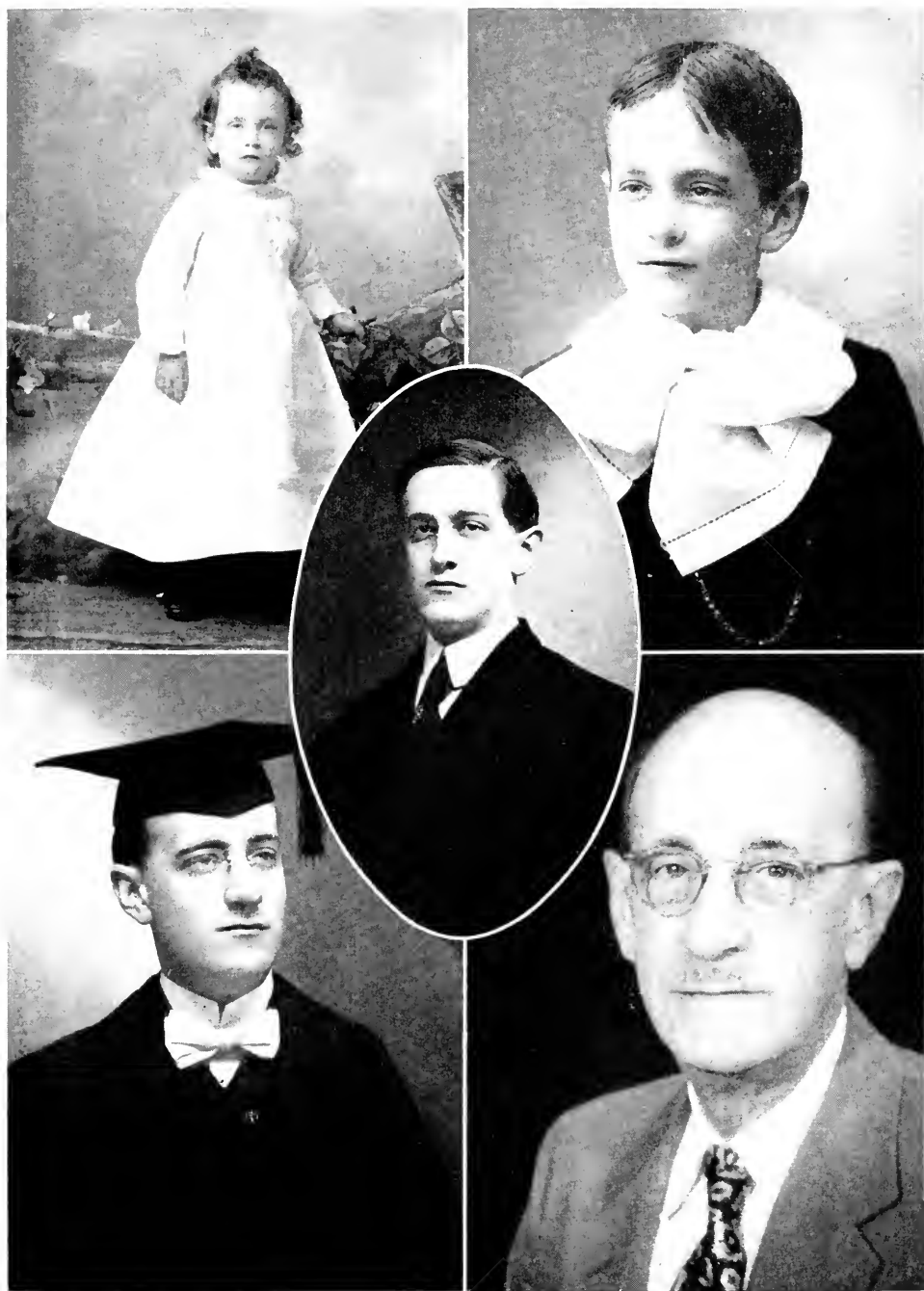
In Danville, Virginia, Malcolm E. Douglass and Ora A. Harriman Douglass were presented with a boy on Christmas day in the year 1888. He was named Louis Harriman Douglass.

Louis was graduated from the Baltimore City College in June, 1907. The following fall, in October, 1907, he matriculated at the University of Maryland, School of Medicine.

During four eventful years he had the privilege of studying under a faculty composed of a number of outstanding teachers.

He was awarded the degree of Doctor of Medicine on June 1, 1911. He spent his intern year, 1911–1912, and a year of residency, 1912–1913, at our University Hospital.

He was appointed to our faculty as Assistant in Obstetrics in 1915; Associate in Obstetrics in 1920; Associate Professor of Obstetrics in 1923; Professor of Clinical Obstetrics in 1927; Acting Head of Obstetrics in 1937 and Professor and Head of Obstetrics in 1938.



Louis H. Douglass (upper l.), age 1 yr; (upper r.) age 7; (center) young graduate, Baltimore City College; (lower l.) upon graduation from University of Maryland; (lower r.) contemporary.

From June, 1917 to October, 1919, he was a Lieutenant in the Medical Corps of the United States Navy.

On March 1, 1935, Dr. Douglass was made Obstetrician-in-Chief at the Baltimore City Hospitals.

Among his contributions to medical care are the low new born and maternal losses in his own clinical work, the organization of the maternal mortality committee of the Baltimore Medical Society, and his participation with other far-sighted physicians in inaugurating the Baltimore Rh Typing Laboratory, Inc.

In the capacity as Department Head, Dr. Douglass has proved an excellent teacher. He has a splendidly organized department from service, records and educational standpoints. His residency program has produced an outstanding group of soundly trained and loyal physicians.

Louis Douglass has spent his whole professional life in our medical school and hospital. He has experienced many advancements on our campus, and has contributed wholesomely to their accomplishment.

He retires on July 1, 1955. He will be missed.

We all wish him a well-earned rest and many more years in which to enjoy it.

By his friend and Dean.

H. Boyd Wylie, Dean

LOUIS H. DOUGLASS

AN APPRAISAL OF HIS NATIONAL INTERESTS

ISADORE A. SIEGEL, M.D.

"The wisest man could ask no more of Fate
Than to be simple, modest, manly, true,
Safe from the Many, honored by the Few;
To count as naught in World, or Church,
or State.

But inwardly in secret to be great;
To feel mysterious Nature ever new;
To touch, if not to grasp her endless clue.
And learn by each discovery how to wait.
He widened knowledge and escaped the
praise;

He wisely taught, because more wise to
learn;

He toiled for Science, not to draw man's
gaze,

But for her lore of self-denial stern.
That such a man could spring from our decays
Fans the soul's nobler faith until it burn."

JAMES RUSSELL LOWELL

Monuments once erected stand only to be forgotten, but words and deeds spark in the hearts of friends and colleagues and there burn brightly. In this light the useful man can see the image of his active life reborn in others—greater by dissemination. Herein lies the secret of the inward greatness of which Lowell speaks, and which Louis Douglass has attained.

"The Boss", as he is fondly known by his staff and professional associates, has succeeded in his professional life in transmitting his knowledge and experience, along with poignant memories of himself, to the men he has trained. His contributions have not been made in the bombastic manner of the crusading Oliver Wendell Holmes, but rather he has in a simple, modest way taught better obstetrics to his colleagues. What is even more important, he has endeavored to improve obstetric care to the expectant mother at all levels; and during all these many years has done so without seeking personal gain or praise.

This is well illustrated in his paper on "Resident Training". Here is shown his keen personal, fatherly interest and consideration for the young doctor. He is always considerate of their welfare, but at the same time inculcating into them their personal responsibility for the health and well being of the expectant mother and her baby. He has thus won the sincere love of all who have worked under him.

Louis Douglass' interest in his profession, in his colleagues, and in the improvement of obstetric care extended beyond the perimeter of his own State. He is a member of many National Societies and Associations. He served as a member of the Executive Committee of the National Federation of Obstetrical and Gynecological Societies, whose purpose was to protect and to improve the profession. His desire to improve the profession and the practice of obstetrics and gynecology led him to take a most active part in the formation of the American Academy of Obstetrics and Gynecology. This organization is open to all men who specialize in this branch of medicine and thus are exposed to the newer knowledge for the improvement of patient care. Dr. Douglass' colleagues honored him for his services by electing him to serve as its First Vice-President. In recognition of his professional standing he was elected and served as Chairman of the Obstetrical and Gynecological Section of the American Medical Association.

His interest in teaching better Obstetrics to graduate physicians led him to travel to various States on lecture tours. In this capacity he travelled to Virginia, the District of Columbia, West Virginia, South Carolina, Pennsylvania, Ohio, Alabama, New Mexico, and Florida speaking on a variety of subjects. His talks were so well received and appreciated that he was made an Honorary member of the Miami Obstetrical and Gynecological Society; the South Carolina Obstetrical and Gynecological Society; and the Virginia Obstetrical and Gynecological Society.

Dr. Douglass, during his many years of professional life as Professor of Obstetrics and Head of the Department of Obstetrics at the University of Maryland School of Medicine, was always available for help and advice. He has taught thousands of students; he has guided many through their period of hospital training; he has given advice and consultation freely to many of his colleagues; and he has been exemplary in his conduct to set the standards of professional life and practice. Dr. Douglass has always accepted his obligations without protest and his honors with humility. He never sought praise but attracted men by his simple manner, kindly consideration and sincere interest in all human beings, regardless of their race, color or creed.

We do him honor today realizing full well that it is we, not he, who have been honored by his presence among us, and it is with sincere love, affection and admiration that we wish him many more years of continued good health and happiness.

PAPERS GIVEN ON HIS LECTURE TOURS

1. Toxemias
2. Problems of the primigravida
3. The management of pre-eclampsia and eclampsia
4. Modern indications and contra-indications for Cesarean section
5. A study of prophylactic penicillin administration to obstetric patients
6. Central episiotomy
7. Breech presentation
8. Prolonged labor
9. Trial forceps
10. Repair of obstetric soft tissue damage
11. Post partum hemorrhage
12. Newer trends in obstetric anesthesia and analgesia
13. Changing concepts in indications for Cesarean section
14. The functions and duties of a maternal mortality committee
15. Dangers and disadvantages of spinal anesthesia
16. Tumors complicating pregnancy
17. Obesity and pregnancy
18. High lights of prenatal and postnatal care

MEMBERSHIP IN PROFESSIONAL SOCIETIES

1. American Medical Association
2. Founding Member, American Academy of Obstetrics and Gynecology
3. American Association of Obstetricians and Abdominal Surgeons
4. American Federation of Obstetrical and Gynecological Societies
5. American College of Surgeons
6. Southern Medical Association
7. American Committee on Maternal Welfare
8. Academy of International Medicine
9. Maryland Society of Obstetrics and Gynecology
10. Baltimore City Medical Society
11. Medical and Chirurgical Faculty of Maryland

HONORARY MEMBERSHIPS

1. Alpha Omega Alpha
2. Miami Obstetrical and Gynecological Society
3. South Carolina Obstetrical and Gynecological Society
4. Virginia Obstetrical and Gynecological Society
5. Diplomate of the American Board of Obstetrics and Gynecology.

SIGNIFICANT ABSTRACTS FROM THE WRITINGS OF
LOUIS H. DOUGLASS

"The argument has often been advanced that Cesarean section was unjustifiable in placenta previa, inasmuch as the life of the child would probably be lost anyway,

but not only our own findings, but those of many observers would indicate that the foetal as well as the maternal mortality would be greatly reduced by the more general use of this method of handling these cases." Douglass, L. H. and Siegel, I. A.: Placenta Previa—An analysis of sixty-four cases treated in the hospital of the University of Maryland. *Am. J. OB & Gyn.* 15: 671, 1928.

"When (pitocin is) given (intravenously) following Cesarean section where the abdomen is open and the uterus may be observed, the reaction is exceedingly interesting. In several instances the contraction was so pronounced that the organ became decidedly blanched, the blood being forced out by the vigor of the contraction." Douglass, L. H., Savage, J. E. & DuPuy, E. N.: Intravenous use of Pitocin. *Am. J. Surg.* 33: 183, 1936.

"All cases of pyelitis complicating pregnancy and the puerperium and especially the more severe ones, should be referred to a urologist after delivery in order that they may be thoroughly examined and properly treated, if treatment is found necessary. No patient should be discharged as cured without this precaution." Douglass, L. H.: Pyelitis in pregnancy. *Medical Forum*, 1937.

"When the head has rotated directly posterior, a much happier outcome can be anticipated if no attempt at rotation is made, but delivery completed after episiotomy, when indicated, with the occiput remaining posterior. We believe that if a rotation of the head anteriorly is attempted or accomplished, when the occiput posterior is practically in the perineum, with a great amount of molding and adaptation of the head, two very serious consequences will result; 1) the vagina will suffer a serious and irreparable damage which the most skillful operator is powerless to prevent and which can merely be minimized by episiotomy, and 2) the baby will be gravely and frequently fatally injured." Douglass, L. H.: Occipitoposterior positions. *Am. J. Surg.* 35: 379, 1937.

"The parturient woman will stand a certain amount of blood loss, as was said in the beginning, and will show no evidence of shock or discomfort, but once the threshold of safety has been passed the reaction is rapid and alarming. The patient therefore must not be left until all bleeding has been controlled and the attendant is certain that it will not recur and that the patient is in satisfactory condition." Douglass, L. H.: Postpartum hemorrhage. *South. Med. Jour.* 30: 639, 1937.

"Infection should always be thought of as a preventable rather than as a curable condition, for in almost every instance it can be traced back to some definite break in technique. The introduction can be traced to three individuals, the doctor, the nurse and the patient herself. An obstetric case is frequently a time consuming and tiring procedure and should not be undertaken unless one is willing to sacrifice much of both time and energy." Douglass, L. H.: Maternal mortality. *West Virginia Med. Jour.* 34: 241, 1938.

"A psychiatric consultation with a well-trained man is often of a great deal of benefit (in hyperemesis gravidarum); not only do the patients frequently reveal to him the underlying reason for their vomiting but, having unburdened themselves, they seem to improve." Douglass, L. H.: The treatment of hyperemesis gravidarum. *Med. Clin. North America*, March, 1939.

"An active maternal mortality committee will be of undoubted help in any cam-

paign to reduce mortality; its meetings should be open to all physicians in the community; and deaths should be discussed openly and frankly from various angles, but especially from that of preventability. In most localities where such a committee has been functioning for any length of time, there has been a very decided drop in the mortality rate." Douglass, L. H.: A study of 201 maternal deaths. *South. Med. Jour.* 33: 301, 1940.

"In conclusion, too much emphasis cannot be placed upon the early recognition and treatment of complications in pregnancy. This can only be done through proper prenatal care, with an appreciation of obscure symptoms that may be indications of more serious trouble in the future. It should be remembered that each therapeutic abortion is in reality not only an admission of inadequacy on the part of the medical profession for the treatment of certain conditions, but also the deliberate destruction of a potential life. The successful termination of a pregnancy with both a live mother and baby is, in reality, the ideal goal for which one should strive." Douglass, L. H. & Seegar, J. K. B. E. Jr.: The decrease in the incidence of therapeutic abortions. *Bull. Sch. Med. Univ. Md.* 26: 145, 1941.

"We now feel that heart disease is not an indication for abdominal delivery, and unless there is some other indication, these patients do better if delivered through the pelvis." Douglass, L. H., Kohl, S. G. & Morrison, J. H.: Cesarean section—An analysis of 1088 consecutive cases. *W. Va. Med. Jour.* 41: 49, 1945.

"Implantation of the placenta under the section scar would appear to favor rupture and it is now a rule of both clinics to refer all patients who have had a section to roentgenology for placenta visualization. If the placenta is reported to be under the scar, the patient is delivered by an elective section.

"Another most important factor in the individual who has had a previous section would appear to be multiparity. As pregnancies continue, the uterine musculature becomes definitely scarred and what was at one time a firm union becomes greatly weakened. Or if several (four or more) pregnancies have gone to term and a condition arises requiring section, the chances of an intact scar are greatly lessened. It would appear to be conservative obstetrics to sterilize these patients." Douglass, L. H. & Morrison, J. H.: Rupture of the uterus. *Am. J. OB & Gyn.* 50: 330, 1945.

"Cervical inspection itself is rather simple, requiring only an assistant and three sponge sticks. Following the delivery of the placenta and the routine administration of the oxytocic drug, the perineum is depressed by a piece of gauze. With a sponge stick the anterior vaginal wall is raised, and the anterior lip of the cervix drops into view. Grasping it and allowing this sponge stick to remain in place, it is a very simple matter to 'walk around' the cervix with the other two. Should a laceration be observed, slight traction plus retraction of the vaginal wall will almost give adequate exposure for repair.

"It is recognized that many do not agree that there is any such entity as 'primary cervical dystocia,' however, in our experience there does appear an occasional case of prolonged labor for which the only explanation seems to be a cervix which refuses to dilate and which upon examination appears to be unduly resistant. It is this type of case which we have classified as 'cervical dystocia' ". Douglass, L. H. & Graves, J. H.: Hysterostomy. *Trans. Am. Asso., OB & Gyn. & Abd. Surg.* 58: 69, 1947.

"Dear Doctor:

"When the Committee on Maternal and Child Welfare of the State Faculty met recently to discuss maternal deaths, that of your patient, Mrs. _____ was among those brought up. It was the opinion of the committee that this was a non-preventable death and that the treatment of the patient while under your care was above criticism.

"It gives me pleasure to forward this report to you because I know we all feel badly when we lose a patient.

"Very truly yours,
L. H. DOUGLASS, M.D., *Chairman*"

"Dear Doctor:

"When the Committee on Maternal and Child Welfare met recently to study maternal deaths in the counties, the case of _____ came up for consideration. It was noted that you requested a report of our findings.

"The committee felt that in this case the cause of death should be changed to "Eclampsia" rather than 'Nephritic Toxemia.' This was on the basis of her age and the fact that this was her first pregnancy.

"It was the opinion of the committee that this should be classified as a preventable death, the fault lying with the patient, in that she failed to follow instructions, and to cooperate. On the other hand, the data submitted by you did not state what treatment she had received while in the hospital and the committee felt that because of this it could not absolve you from all blame. If you could find the time to send us a complete summary of the case while under your care I am sure it would be of mutual benefit.

"I trust that you will understand that the above was the opinion of the committee as a whole and not that of any one person. Any criticism is made in a spirit of co-operation and the hope that you may profit thereby.

"Very truly yours,
LOUIS H. DOUGLASS, M.D., *Chairman*"

Douglass, L. H.: The study of maternal mortality. Proc. of 3rd Am. Cong. OB & Gyn. 268, 1947.

"From this we can conclude that multiple sclerosis has no ill-effects upon pregnancy or upon offspring. It is our feeling at present that multiple sclerosis is not an indication for therapeutic abortion. There may be exceptions to this in individual cases where the disease is particularly severe. On the other hand, any woman afflicted with a condition as serious and as hopeless as multiple sclerosis appears to be at present, is probably better off if she is not burdened with a home and a family. The advice to remain single is good advice. If this is disregarded, perhaps contraceptives of one kind or another should be prescribed. Sterilization is only one method of carrying out contraception." Douglass, L. H. & Jorgensen, C. L.: Pregnancy and multiple sclerosis. Am. J. OB & Gyn. 55: 332, 1948.

"The uterovesical fold of peritoneum must be carefully inspected for lacerations and if found these should be sutured before the uterus is opened. Peritoneal contamination is theoretically much higher if this is not done. This is also a debatable

point since a hole, even the size of that made by an average-sized round needle, certainly affords an avenue of entry for bacteria into the peritoneal cavity." Douglass, L. H. & Hoopes, L. L.: Experience with the Norton extraperitoneal sections. *Am. J. Surg.* 76: 378, 1948.

"Among the outstanding errors in handling pregnant cardiac patients are:—

"1. Failure to properly diagnose and evaluate the cardiac status. This error was repeated a number of times.

"2. Failure to impress upon the patient the real seriousness of her condition and to secure her full cooperation.

"3. Failure to hospitalize at the first sign of decompensation and to continue hospitalization until after delivery.

"4. Failure to admit all cardiacs routinely to the hospital some two to three weeks before term.

"5. The use of inhalation anesthesia rather than regional or local.

"6. Too early ambulation and too short hospitalization postpartum.

"The cardiac patient during pregnancy is most unpredictable and requires extremely close supervision, careful evaluation, and prompt treatment." Douglass, L. H. & Hoopes, L. L.: The cardiac patient in pregnancy. *Am. J. OB & Gyn.* 61: 373, 1951.

"One of the arguments against elective perineorrhaphy, increased vascularity, is actually an argument in its favor. Better blood supply means better healing of tissues and better results. Other favorable factors are as follows:

"1. The operation is easier at this time. The line of cleavage between the vaginal mucosa and underlying structures is easier to find and is stripped off with surprising ease. 2. The postoperative period is decidedly less painful, being only slightly greater than in the case of repair of fresh lacerations. 3. The postpartum hospital stay is not increased, unless patients are customarily discharged within 48 hours. 4. The patient does not have to look forward to, nor make preparations for, another period of hospitalization. 5. The obstetrician can feel satisfied that he has done a good job and that the patient is in better physical condition than she was before the birth of the child.

"Speaking from a personal standpoint, I would like to report that I have been more than repaid for the extra time and effort spent on these repairs by the many voluntary expressions of gratitude from patients who were amazed and delighted at how much more comfortable they were following this delivery than they had been since the beginning of their childbearing life. My one regret is that I did not begin the practice at an earlier date." Douglass, L. H.: Repair of obstetric soft tissue damage immediately post partum. *Chairman's Address: J.A.M.A.* 150: 1061, 1952.

"What can be done about atony? The answer to this is that several things should be done and that the treatment of uterine atony begins with its prevention. It is well known that overdistension during pregnancy may result in loss of tone both during and after labor. In these cases be especially careful to allow the uterus to empty itself slowly. If hydramnios be present the fluid should be drained off gradually rather than in a sudden gush. If multiple pregnancy is the cause of the overdistension,

deliberately wait some 15 minutes or more after the delivery of the first baby and allow the uterus to adjust itself to its decreased contents.

"Bi-manual compression. One hand is placed on the fundus externally and the other hand in the vagina either grasping the cervix or with the closed fist pressing against it. If good technique is not present the second hand may make pressure on a perineal pad held against the perineum. By firm and constant pressure the uterine arteries are kinked to the extent that little or no blood reaches the uterus and the bleeding is controlled. This bimanual compression should be continued for a minimum of 10 minutes. At the end of this time it will be found that in a large number of instances clotting has occurred and that there will be no further bleeding." Douglass, L. H.: Postpartum hemorrhage. *Clinical Medicine*, Jan. 1953.

"This study has convinced us that the midforceps operation, when always carried to conclusion, may be a very dangerous one for the infant, ranking second only to internal podalic version and breech extraction. On the other hand, many of these cases of midpelvic arrest may be capable of successful delivery with gentle traction and with a minimum of risk. If these gentle efforts fail, all attempts at vaginal delivery should be discontinued and resort had to the abdominal route. This does not appear to increase the risk to the mother while it is slightly increased in theory, but it is doubtful if this will prove true in actual practice, for a certain number of patients delivered abdominally without trial forceps would be found to have easy vaginal deliveries when the attempt is made." Douglass, L. H. & Kaltreider, D. F.: Trial forceps. *Am. J. OB & Gyn.* 65: 889, 1953.

"The Norton extraperitoneal Cesarean section is the abdominal operation of choice after a patient has been in labor 30 hours or more in spite of modern antibiotic therapy." Douglass, L. H., Gilbert, C. R. A., Valdares, J. & Kaltreider, D. F.: Extraperitoneal Cesarean section vs. the laparotrachelotomy in the ear of modern antibiotic therapy. *Am. J. OB & Gyn.* 66: 79, 1953.

"Pregnant women at term do not tolerate high dosages of spinal anesthetic agents." Douglass, L. H. & Schwartz, B. C.: Spinal anesthesia for Cesarean section. *OB & Gyn.* 2: 308, 1953.

"The very probable reason why so many men in general practice include obstetrics is because of a real liking for, and deep interest in, this branch of medicine. And it is certainly true that if this liking and interest exist, the physicians should continue to include obstetrics in their general practice. On the other hand, should it become an unpleasant burden, then, in fairness to himself and to his patients, the physician should cease to do obstetrics and should confine his work to those fields which are more pleasant for him.

"Today the large majority of all births in urban and many in rural areas occur in hospitals and rightly so. Hospital deliveries are more convenient for both patient and physician and are certainly much safer. This trend is in some measure responsible for the very gratifying lowering of maternal mortality of recent years.

"Taking everything into consideration it is felt that obstetric care in this State is on a very high level and is constantly improving. Naturally there is room for more improvement and it is doubtful that any of us will ever reach perfection. It would be unfortunate if we did for if there is no improvement to be attained, the incentive

to work disappears and monotony and boredom occur." Douglass, L. H. & Kallreider, D. F.: *Obstetrics in general practice*. Md. State Med. Jour. 3: 281, 1954.

"Placenta previa occurring during the years 1920-1926 was treated by internal podalic version and breech extraction 56.25 per cent, breech extraction 4.72 per cent, forceps 1.56 per cent, Cesarean section 21.87 per cent, spontaneous labor 15.6 per cent. The maternal mortality is 6.25 per cent and the fetal mortality 53.8 per cent. A more liberal use of Cesarean section is advocated after all known measures for controlling and combatting hemorrhage are at hand and available for instant use." Douglass, L. H. & Siegel, I. A.: *Placenta previa—An analysis of sixty-four cases treated in the hospital of the University of Maryland*. Am. J. OB & Gyn. 15: 671, 1928.

"The use of pitocin intravenously should be confined to the third stage of labor since it results in vigorous and sustained contractions of the uterus. The apparent absence of the pressor factor permits its use in almost all cases and is not contraindicated in toxemic patients, those with cardiovascular conditions, damaged kidneys, etc. as advocated by some authors." Douglass, L. H., Savage, J. E. & Dupuy, E. N.: *Intravenous Use of Pitocin*. Am. J. Surg. 33: 183, 1936.

"Hemorrhage resulting from lacerations of the birth canal and from retention is as a rule easily controllable if the proper measures are taken. On the other hand, bleeding as a result of uterine atony may be very resistant to all forms of treatment. There have been added to the older methods of treatment several drugs which are a decided advance in our attempts to combat this condition. They are namely: ergot alkaloid and pituitary extracts, particularly pitocin which may be administered intravenously. Blood transfusion is often a life saving procedure. With these in mind, it becomes less and less frequently necessary for us to resort to packing the uterus." Douglass, L. H.: *Postpartum hemorrhage*. South Med. Jour. 30: 639, 1937.

"It is our feeling that paraldehyde, in sufficient amounts will absolutely control the convulsions of eclampsia and permit a continuation of the conservative treatment for an indefinite period of time, whether this be hours or days." Douglass, L. H. & Linn, R. F.: *Paraldehyde in obstetrics, with particular reference to its use in eclampsia*. Am. J. OB & Gyn. 43: 844, 1942.

"In breech presentation, usually with a small, poorly developed or a premature baby, it occasionally happens that the body and shoulders of the child will pass through a cervix not sufficiently dilated to permit passage of the head. Here, hysterostomy, while technically more difficult than in vertex presentations, is often the only means by which we have any hope at all of obtaining a living child." Douglass, L. H. & Graves, J. H.: *Hysterostomy*. Trans. Am. Asso., OB & Gyn. & Abdl. Surg. 58: 69, 1947.

"Pregnancy has little, if any, effect on multiple sclerosis. The disease is one which is progressive and one in which remissions and exacerbations normally occur. It does not appear that the progress is accelerated by pregnancy, nor is pregnancy likely to cause exacerbations. It is our feeling at present that multiple sclerosis is not an indication for therapeutic abortion." Douglass, L. H. & Jorgensen, C. L.: *Pregnancy and multiple sclerosis*. Am. J. OB & Gyn. 55: 332, 1948.

"Patients with preeclampsia have been delivered by section with about the same

frequency for the last 16 years. These cases are usually primigravidas, prior to term, who develop severe toxemias which do not respond to hospital treatment and whose cervixes are not ripe. Eclampsia is not now treated by section. Only those cases which respond to conservative treatment but because of the stage of their pregnancy, the existence of a disproportion, or some other factor, are not candidates for delivery from below, come to section. We prefer to classify these as cases of 'post eclampsia.' " Douglass, L. H., Kohl, S. G. & Morrison, J. H.: Cesarean Section—An analysis of 1088 consecutive cases. *W. Va. Med. Jour.* 41: 49, 1945.

"The Norton type of paravesical extraperitoneal section offers to the obstetrician a method of abdominal delivery when the patient is infected and when there is no contraindication to the extraperitoneal approach such as (1) a very severely infected patient; (2) atonic uterus; (3) when sterilization is desired; (4) an adnexal condition such as an ovarian cyst producing dystocia." Douglass, L. H. & Hoopes, L. L.: Experience with the Norton extraperitoneal sections. *Am. J. Surg.* 76: 378, 1948.

"As time went on, we found fewer and fewer instances of attempts to do more than open the sac, remove the child, sever and tie the cord as close to the placenta as was convenient, and close the sac and abdomen. Therefore, we feel that manipulation and exploration must be kept at a minimum." Douglass, L. H. & Kohl, S. G.: Abdominal pregnancy, *W. Va. Med. Jour.* 43: No. 9, 1947.

"Attention has recently been directed to the fact that many of these patients suffer from avitaminosis, this being especially true when the vomiting has been present for a long period of time, and the administration of vitamins B and C is highly recommended." Douglass, L. H.: The treatment of hyperemesis gravidarum. *Med. Clin. North America*, March, 1939.

"In our efforts to reduce maternal mortality, we must not overlook the great advantages of prenatal care, so that the woman comes to her confinement prepared in every possible way to meet her ordeal and to go through it successfully." Douglass, L. H. A study of 201 maternal deaths. *South. Med. Jour.* 33: 301, 1940.

"At the present time it is the feeling of everyone in the Department of Obstetrics that B₁ should be used in hyperemesis. It looks as if vitamin K offers the best treatment available at present in hemorrhagic disease of the newborn, and in the prophylaxis and treatment of multiple, minute hemorrhages in the brain." Douglass, L. H.: The vitamins in obstetrics, in Davis, Carl Henry: Gynecology and obstetrics, Hagerstown, Maryland, W. F. Prior Co., Inc., 1949, vol. 3, Chp. 15, sect. 2.

"Pregnant women at term do not tolerate high dosages of spinal anesthetic agents. Even the relative low dose of 5 mg. of Pontocaine was found to be dangerous when given as an initial dose. The high doses in use today were also found to be unnecessary for good anesthesia in Cesarean sections." Douglass, L. H. & Schwartz, B. C.: Spinal anesthesia for Cesarean section. *OB & Gyn.* 2: 308, 1953.

AN ABSTRACT OF A MATERNAL DEATH RECORD

This 41-year-old white female, a gravida I, approximately 26-27 weeks pregnant, was admitted to the hospital at 10:30 a.m. on September 11 in deep coma and in convulsions.

The patient had been a known severe hypertensive for many years. Her family

physician stated that for the past 6 years her blood pressure had ranged from 170 to 200 systolic over 130 diastolic. She was also a psychopathic depressive and had been in and out of mental institutions over the past 15 years. Her hypertension prior to pregnancy had been treated with phenobarbital and with *veratrum viridae*. She had had occasional episodes of mild dyspnoea; however, no orthopnoea, edema, palpitation or precordial pain are mentioned in the history.

The patient had been married for 7 years, and was strongly advised against becoming pregnant by her physician because of her hypertensive disease. Contraception was apparently practiced for the first 6½ years; however, during the 6 succeeding months she had attempted to conceive. Her last menstrual period was February 25. Her husband stated that "other than being in a very depressed state and not caring to eat, she seemed to be all right."

The diagnosis of pregnancy was made by her general practitioner at about the fourteenth week of gestation. Uterine fibroids were noted at the same time. The patient was placed on a salt-poor diet, her urine was negative for albumin and her blood pressure was noted as 140 systolic. The date of the doctor's first home visit was June 1. The patient was followed entirely at home, being seen every other Saturday by her family physician. A consulting obstetrician also saw her on two occasions prior to her hospital admission. Urine specimens were obtained and were consistently negative. Blood pressures were recorded, but the patient had no scale in the home and was not weighed. During the month of July, the blood pressure rose to 160 systolic, and during August climbed to a range of 180–190 systolic. As her pressure continued to rise, she tended to become more and more depressed, stating that she would be unable to take care of the baby in her present condition. She became so self conscious that she would not leave the house and only after dark would she sit on the back porch.

The first sign of albuminuria was noted Saturday, September 3. During the following week the patient began to complain of severe headache, occipital and frontal, and pain in the lower part of her back. Slight swelling of the ankles was also noted, but not of her hands. She was constipated, for the most part, with intermittent periods of diarrhoea. For two months she had also noted marked urinary urgency and frequency.

The patient was seen at home by a consulting obstetrician at 10:00 a.m. on September 10. At that time her pressure was 200 systolic over 120 diastolic. She had no complaints and was sitting on the side of her bed. At noon she was seen by her family physician, who noted a 2-plus albuminuria and a blood pressure of 220 systolic over 140 diastolic. He stated that the patient then complained of abdominal pain and headache. She was given dolophine hypodermically. Some time between noon and 1:00 p.m. the patient complained of dizziness and began to fall. Her husband caught her and laid her on the floor. She was unconscious for approximately 15 minutes. The family physician was called and advised "aromatic spirits of ammonia." When the patient regained consciousness, she recognized her husband and knew where she was. She was put to bed and at 3:00 p.m. suffered a generalized convulsion. At 4:00 p.m. she was given a pill orally that had been left by the physician. Prior to the arrival of the physician, after an unconscious period of 45 min-

utes, she sustained another generalized convulsion. The doctor arrived at approximately 5:00 p.m., administered a hypodermic and departed. At approximately 6:30 p.m. a third generalized seizure occurred. The doctor was again called and the husband was told "that, in all probability, the convulsions would cease." The period of unconsciousness following this convulsion lasted until about 8:15 p.m. The husband stated that "by that time it was very difficult for my wife to recognize me." The doctor was again called and the husband was told that, if the convulsions persisted, the patient would be sent to the hospital in the morning. Another convulsion occurred at 10:00 p.m., following which the patient lapsed into coma for 90 minutes.

These convulsions seemed to occur with extreme regularity throughout the night. Her husband stated that he could recognize the symptoms leading to another attack.

The last seizure at home was at about 8:30 a.m. on September 11 and by that time she was in deep coma. Her total convulsions were estimated at 13 in number.

The husband stated that the patient began to bleed vaginally some time during the night.

The physician was called at 9:30 a.m., September 11, and he advised that the patient be brought to the hospital by ambulance. The ambulance arrived at the home at 10:15 a.m. When the patient was turned over in bed, she was found lying in a large pool of blood with a dead fetus and placenta between her legs. The fetus and placenta were brought along to the hospital. Fetal size corresponded to a 26-week gestation. The placenta was noted to be intact and weighed 48 grams. The fetal weight was 795 grams. Nothing grossly was noted as regards the placenta except for two fibrotic areas in the periphery of the maternal surface.

This patient survived in coma for 26 days after reaching the hospital. She died as a result of a massive cerebral hemorrhage suffered during the repeated convulsions at home.

Comment of Dr. L. H. Douglass:—"Gross negligence. The physicians' license should be revoked."

THE TRAINING OF A RESIDENT*

LOUIS H. DOUGLASS, M.D.

BALTIMORE, MARYLAND

Just as we discuss maternal mortality in open meetings, let us talk about some of our other mistakes. Perhaps resident training is one about which something can be done.

The young physician who seeks residency training in obstetrics and gynecology, or any other specialty for that matter, deliberately and willingly commits himself to a period of three or four years of little or no financial return. He agrees to perform a number of uninteresting and sometimes unpleasant but necessary tasks and to forego a certain number of the pleasures of life. In return he asks that he be given

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the opportunity to perfect himself in the particular specialty to a degree required by a certifying board or to a point where he is capable of handling the more difficult cases in his special field. What would motivate a young, and therefore presumably impatient individual thus deliberately to extend his period of education and training for three or four more years? Certainly not financial gain, for an immediate entry into general practice would be much more remunerative. Hardly prestige or position, for specialists today are as common as automobiles. There are an immense number of each specialty running around the country competing with each other. No, I am convinced that in the large majority of instances there is a real desire for knowledge and, though the young man might hesitate to admit it, an earnest wish to render the best possible service to humanity.

Whether this be true or not is not too important for this discussion; the fact remains that these men come to us and put themselves in our hands with a faith that is sometimes quite pathetic. It is our duty to do everything in our power to justify this faith and if we are unwilling to give freely of our time, our knowledge and our skill, then we should not accept the responsibility.

When we consider the question of residency training in obstetrics and gynecology from the viewpoint of our duty to the trainee, I fear that there are several ways in which we are being less than fair and honest. First, the number of positions offered and the number of training programs approved. I have made no attempt to study the situation over the nation but have used Baltimore as one example. You are all familiar with your own communities and can compare them with what I report here. In Baltimore there are 15 hospitals approved for training in our specialty and these 15 hospitals have 93 positions to fill. If in each hospital the training period were of four years, and this is true in only a few, it would mean that a maximum of 60 trainees could complete their training. Therefore, at least 33 men are accepted each year with the definite knowledge that they will be dropped from the picture somewhere along the line. While a certain amount of competition is desirable, should it not be at a lower level, that is, in the intern year?

What about clinical material? Again using Baltimore as an example, we find that a very high percentage of the clinic cases are handled by four hospitals. While the remainder have so-called "service beds," a close survey would indicate that they are few in number and that often the hospital charges are of necessity so high that the majority of the patients who can afford them can also pay a professional fee and become private patients. The spread of prepaid insurance for complete medical care has most certainly not helped this situation. To meet the deficiency, we find that there is an increasing tendency for the visiting men to turn over their private patients to the house staff for operation or delivery, as the case may be. If this is done with the full knowledge and consent of the patient, if professional fees are properly adjusted, and if all types of cases are so turned over, then there is little to be said against this practice. Yet, I find it difficult to imagine a physician making a statement such as this to a patient referred to him for an especially difficult operation:

"Mrs. So and So, in order that the resident may receive more training, I am going to allow him to perform this operation on you. Because of this I shall make such and such adjustment in my fee."

I trust I am wrong and that this is the procedure followed in all cases. If not, then we are not being honest with the patient and we are saying to our resident staff that it is not necessary for them to be honest in their own practice.

Another phase of training, which can more easily be remedied in the smaller or nonteaching hospital, is that of organized conferences, ward-rounds and journal clubs. If the chief is so inclined and is willing to give freely of his time, his knowledge and his experience, these can be made quite attractive and valuable. But I fear this is neglected frequently and the house staff is allowed to shift for itself. A few years ago I went to one of the hospitals in Baltimore to see a patient in consultation. The problem was relatively simple and was disposed of in a few minutes. Following this, I was flattered and quite amazed to find myself surrounded by the house staff who spent at least an hour asking me questions about a number of subjects and who were apparently hungry for information and instruction. Upon inquiry it was disclosed that in that particular hospital there was no organized teaching program at all. This was about 10 years ago and at this writing there still is no such program.

It might be suspected that, in some instances, the desire of the hospital to establish residency training and to have such training approved for board certification was based upon the need for a house staff to assist in the care of private patients rather than the urge to offer training and instruction to young men eager to perfect themselves in a particular specialty. This is certainly economical from the standpoint of the attending man, but is most unfair to the trainee. It is admitted that assisting and watching a skilled physician is important, especially if he takes the time and trouble to teach and explain as he operates. Too often he is the "silent operator" type, who prides himself on the speed with which he can complete any given procedure and who has not the inclination or the ability to instruct. He expects from those assisting him only mechanical dexterity. He discourages questions or discussion of the case and is unwilling to tell why he does things in a certain way or to demonstrate anatomy. No matter how polished an operator this man may be, he is not a teacher and should not be given the responsibility for training others.

What, then, is the answer to this problem? Very frankly, I do not know. I have some ideas on the subject, but certainly not the complete answer. I present it to you for your careful consideration and with the plea that we all look into it from our own standpoint and ask ourselves how we can give better and better training to these young physicians who entrust themselves and their futures to our care.

First, residency programs should not be established merely to obtain help in the care of private patients. If that is all that is desired, then paid assistants may be used or a preceptor program established. Here the patient knows what is going on and that value is being received for the money spent. An assistant or a junior partner can relieve his chief of many of the details of practice and can make life much more pleasant for him. Since these arrangements are usually on a long time basis, the training of the assistant does not have to be concentrated into a three-year period, but may be more gradual and much more complete.

If a residency program is offered, every attempt should be made to have it as complete as possible. Pyramiding should be kept to a minimum and, if possible, incomplete training (of one or two years) should be offered only to those who do not desire

to qualify themselves for board certification. For the remainder there should be a steady progression through the various stages of assistant residency to the final one of chief resident. The last named individual should be given a large amount of responsibility, both administrative and professional and should be encouraged to make many decisions for himself.

Remuneration of a sort should be given all trainees and it should be sufficient to keep them moderately happy. By this I do not mean that large sums should be paid to house officers or that the amount be such that it will compensate for inferior training. Hospitals should not enter into competition with each other on the basis of how much they pay, but rather on the basis of opportunity for experience and education.

A chief of a service should feel the same sense of responsibility to his house staff that he does to his own family. Actually they are temporarily his children and they should look upon him as a father, a guide, a counselor and an example they can follow. Habit patterns they acquire during these formative years will probably remain with them for the rest of their lives. It is during these years that they learn the rudiments and essentials of medical ethics, how to handle patients and to look upon them not as "cases" but as human beings capable of joy and sorrow, even as you and I. They must be taught the sanctity of human life and a pride in their profession. There must be instilled into them the desire constantly to increase their knowledge and their ability and the realization that no one ever reaches the point where there is nothing new to learn.

This would appear to be a large order and indeed it is. The responsibility to be assumed in the training of a resident is a real and great one. It should be assumed only after due consideration and only if one is genuinely and sincerely interested in giving these young men the best possible training.

DISCUSSION (*Abstract*)

Dr. Willis E. Brown, Little Rock, Ark.—This paper is both fitting, timely, thought-provoking, and quite controversial.

The problem is important, and if we do not clean our own house it will be cleaned for us. We cannot shirk much longer the responsibility of turning out partially and poorly trained specialists. The level of specialty care will fall inevitably if we do not face this problem.

The purpose of a residency training program is quite simply stated but not easily provided. It is to insure a mechanism for the guiding of young physicians through a clinical experience which will make it possible for them to practice the art on the highest possible plane. The American Medical Association recognizes, and our boards of specialization recognize, two mechanisms for the accomplishment of this purpose: preceptorship and residency training.

Dr. Douglass has undertaken to describe the pitfalls and problems of the residency training problem in Baltimore. They are not unique in that city.

The ingredients necessary for a good residency training program may be defined in three general categories: first, and I believe foremost, the chief of service; secondly, he must have willing and capable assistants; and third, there must be clinical material.

Dr. Douglass says: "These men . . . put themselves in our hands with a faith that is sometimes quite pathetic. It is our duty to do everything in our power to justify this faith, and if we are unwilling to give freely of our time and knowledge and our skills, then we should not accept this responsibility." I quote him again: "If the chief is so inclined, and will give willingly and freely of his time, organized conferences can be developed which are both attractive and valuable." And third: "A chief of service should feel the same sense of responsibility to his house staff as he does

to his own family. Actually they are temporarily his children, and they should look upon him as a father, guide and counselor." The chief of service is usually the busiest practitioner with the largest and most remunerative practice, who wants an assistant, not students. If the chief will take the time, even a poor hospital can offer a good residency.

I should like to list five requirements for a good residency training program: (1) clinical material; (2) mechanisms for the correlation of the art of obstetrics and gynecology with the science of our disciplines; (3) opportunity to make decisions; (4) the resident must teach in order to learn to crystallize his thoughts and formulate his ideas; and (5) he must be given an opportunity to gain maturity.

When we speak of clinical experience we are prone to refer to the thousands of women delivered within our portals. What proportion of our disciplines are hospitalized? What of the outpatient? The number of beds is not the answer. It is an opportunity for a resident to have contact with both inpatient and outpatient material. He may study private patients, but he will gain experience only on patients fully committed to his care.

The arts and science of our discipline must be correlated. May I use as an example the area of pathology? All too often we turn our residents over to the professor of pathology or the pathologist of the hospital for his training in pathology. This may enable him to pass the Board examinations. But the chief of service or one of his associates should study the patient with the resident, see the lesion with him, look at the slides with him, open the abdomen with him, discuss the clinical pathology, and watch the convalescence. Then, and only then, does the science of pathology become a part of the art and science of the practice of obstetrics and gynecology.

The pathologist can teach the architecture seen on the slide only. Only the clinician, with the patient in front of him, can properly read the slide.

Conferences of all varieties can be developed. All of the films of the departmental program can be reviewed once a week with the radiologist, and the history and the clinical interpretation brought to bear. Ward rounds, seminars, may easily and adequately correlate the art and science of our specialty. They require the time of the chief of service.

The opportunity to make decisions is extremely important. The resident who finds the patient already admitted to the hospital with a known tumor is then only a technical assistant. The decision was made. The resident must have an opportunity to make decisions, and, if I may say so, to make his share of the mistakes. It is up to us to provide the necessary safeguards that the patient not be hurt, but the resident must make his share of the decisions and mistakes.

Perhaps you do not visualize teaching as an important part of the training of a resident. It is an extremely important part. Until the resident has learned to formulate his thoughts, until he has learned to express them, he has not made them a part of himself. In the nonteaching hospital there are always student nurses to be taught; there are interns to be taught; there are staff meetings at which the resident may read a paper, and county society meetings. He can carry out research. There is ample opportunity for the resident to teach even his chief. Give him that opportunity, and it will greatly enhance his educational experience.

The hardest thing to attain is maturity. Time is one of the ingredients of maturity, and the one- or two-year residencies can never accomplish it. The man who spends one year here, and one year there, and one year somewhere else is still in the diaper stage professionally. He must have time to mature under one chief. He must have increasing responsibility.

These mechanisms are easily obtainable in most teaching hospitals. How about the nonteaching hospitals? How about the institution in the smaller community? They, too, if they will, can provide good residency programs. If they cannot, they should be discontinued.

The most important thing is to revise, revitalize, and re-select the chief of staff. If he is willing to spend the time and energy, a good program can be developed.

The third possibility is that they may affiliate with another teaching institution. In this regard I should like to describe briefly a plan that we have embarked upon at the University of Arkansas with one of our associated hospitals in that community.

We have worked out an affiliated program in which the residents spend their correlative time at the University; they see the patients in the private hospital for intervals of time during their service, and the chief of service at that institution sees to it that they increase their responsibility while in that institution. They then return to the University for their maturing process.

Affiliated programs may be built along a variety of lines. The chief of the parent service will have to have some supervisory control over the residents in the affiliated hospital; otherwise it is only a span of time spent without reward.

Each community has its own problem. Each of us will have to survey our own hospital and our own residency training program, and each of us will have to see that the chief of service spends the necessary time with the men to be trained.

BIBLIOGRAPHY, LOUIS H. DOUGLASS

- DOUGLASS, L. H. & SIEGEL, I. A. Placenta previa—An analysis of 64 cases treated in the hospital of the University of Maryland. *Am. J. OB & Gyn.* **15**: 671, 1928.
- DOUGLASS, L. H., SAVAGE, J. E. & DUPUY, E. N.: Intravenous use of pitocin. *Am. J. Surg.* **33**: 183, 1936.
- DOUGLASS, L. H.: Pyelitis in pregnancy. *Medical Forum*, 1937.
- DOUGLASS, L. H.: Occipitoposterior positions. *Am. J. Surg.* **35**: 379, 1937.
- DOUGLASS, L. H. & PEYTON, F. W.: Oral paraldehyde administration in obstetrics. *Am. J. OB & Gyn.* **33**: 604, 1937.
- DOUGLASS, L. H.: Postpartum hemorrhage. *South. Med. Jour.* **30**: 639, 1937.
- DOUGLASS, L. H.: An epidemic of mouth infection of the newborn. *Jour. Ped.* **12**: 323, 1938.
- DOUGLASS, L. H.: Maternal mortality. *West. Va. Med. Jour.* **34**: 241, 1938.
- DOUGLASS, L. H., SAVAGE, J. E. & WYLIE, H. B.: A chemical test for pregnancy applied to the determination of estrin in the urine of normal and toxemic patients in the last trimester of pregnancy. *Am. J. OB & Gyn.* **36**: 39, 1938.
- DOUGLASS, L. H.: The treatment of hyperemesis gravidarum. *Med. Clin. North America*, March, 1939.
- DOUGLASS, L. H.: A study of 201 maternal deaths. *South. Med. Jour.* **33**: 301, 1940.
- DOUGLASS, L. H.: The vitamins in obstetrics. *Bull. Sch. Med. Univ. of Md.* **24**: 217, 1940.
- DOUGLASS, L. H., CONNALLY, H. F. JR., DANN, D. I. & REESE, J. M.: A clinical study of the effects of diethylstilbestrol on puerperal women. *Am. J. OB & Gyn.* **40**: 445, 1940.
- DOUGLASS, L. H.: The obstetrical problem in Maryland. *The Mother*, Jan., 1941.
- DOUGLASS, L. H. & DIXON, D. M.: Paraldehyde as a factor in lowering major operative interference. *Bull. Sch. Med. Univ. of Md.* **26**: 139, 1941.
- DOUGLASS, L. H. & SEEGAR, J. K. B. F. JR.: The decrease in the incidence of therapeutic abortions. *Bull. Sch. Med. Univ. of Md.* **26**: 145, 1941.
- DOUGLASS, L. H. & LINN, R. F.: Paraldehyde in obstetrics, with particular reference to its use in eclampsia. *Am. J. OB & Gyn.* **43**: 844, 1942.
- DOUGLASS, L. H., KOHL, S. G. & BRIELE, H. A.: Volvulus complicating pregnancy. *Am. J. OB & Gyn.* **48**: 398, 1944.
- DOUGLASS, L. H., KOHL, S. G. & MORRISON, J. H.: Cesarean section—an analysis of 1088 consecutive cases. *W. Va. Med. Jour.* **41**: 49, 1945.
- DOUGLASS, L. H. & MORRISON, J. H.: Rupture of the uterus. *Am. J. OB & Gyn.* **50**: 330, 1945.
- DOUGLASS, L. H. & GRAVES, J. H.: Hysterostomy. *Trans. Am. Asso. OB Gyn. & Abd. Surg.* **58**: 69, 1947.

- DOUGLASS, L. H.: The study of maternal mortality. Proc. of 3rd Am. Cong. of OB & Gyn. 268, 1947.
- DOUGLASS, L. H. & KOHL, S. G.: Abdominal pregnancy. W. Va. Med. Jour. **43**: No. 9, 2, 1947.
- DOUGLASS, L. H. & JORGENSEN, C. L.: Pregnancy and multiple sclerosis. Am. J. OB & Gyn. **55**: 332, 1948.
- DOUGLASS, L. H. & HOOPES, L. L.: Experience with the Norton extraperitoneal sections. Am. J. Surg. **76**: 378, 1948.
- DOUGLASS, & HOOPES, L. L.: The cardiac patient in pregnancy. Am. J. OB & Gyn. **61**: 373, 1951.
- DOUGLASS, L. H.: Repair of obstetric soft tissue damage immediately post partum. Chairman's Address: J.A.M.A. **150**: 1061, 1952.
- DOUGLASS, L. H., GILBERT, C. R. A., KALTREIDER, D. F. & McNALLY, H. B.: The evaluation of the Willett clamp scalp traction by means of the tokodynamometer and comments on the use of the clamp. Am. J. OB & Gyn. **65**: 40, 1953.
- DOUGLASS, L. H.: Postpartum hemorrhage. Clin. Med., January, 1953.
- DOUGLASS, L. H., MORRISON, J. H. & OSTER, R.: Cerebral dysrhythmia and acute toxemia of pregnancy. OB Gyn. **1**: 287, 1953.
- DOUGLASS, L. H. & KALTREIDER, D. F.: Trial forceps. Am. J. OB & Gyn. **65**: 889, 1953.
- DOUGLASS, L. H., GILBERT, C. R. A., VALDERAS, J. & KALTREIDER, D. F.: Extra-peritoneal Cesarean section vs. the laparotrachelotomy in the era of modern antibiotic therapy. Am. J. OB & Gyn. **66**: 79, 1953.
- DOUGLASS, L. H. & SCHWARTZ, B.: Spinal anesthesia for cesarean section. OB Gyn. **2**: 308, 1953.
- DOUGLASS, L. H. & GALLAHER, J. P.: Sarcoidosis and Pregnancy. OB & Gyn. **2**: 590, 1953.
- DOUGLASS, L. H.: The training of a resident. South. Med. Jour. **47**: 265, 1954.
- DOUGLASS, L. H. & KALTREIDER, D. F.: Obstetrics in general practice. Md. State Med. Jour. **3**: 281, 1954.
- DOUGLASS, L. H., WAGNER, JOHN A. & SLAGER, URSULA: Dystocia caused by fetal intercranial teratoma. OB & Gyn. **4**: 6, 1954.

THE DOUGTRICIANS

JOHN E. SAVAGE, M.D.

At the Third American Congress of Obstetrics and Gynecology held in St. Louis, Missouri, in 1947, a number of the former residents of Dr. Louis H. Douglass conceived the idea of organizing a society. The membership was to be composed of all Dr. Douglass' former residents in obstetrics at the University and Baltimore City Hospitals. As an outgrowth of this informal meeting the Dougtricians came into being. The name Dougtricians was coined by the late Dr. M. Alexander Novey to designate this group of Douglass-trained obstetricians. According to the constitution, the objectives are: "To honor Dr. Louis H. Douglass, to advance the science and art

of obstetrics, and to promote good fellowship and good will among the past residents in obstetrics of the University and Baltimore City Hospitals."

The first meeting was held on June 2, 1949 at the University Hospital with dinner at the Baltimore Country Club. Thirty-one members were present, and six scientific papers were presented. At this organizational meeting the officers elected were: Dr. J. G. M. Reese, President; Dr. D. F. Kaltreider, Vice-President; Dr. M. A. Novey, Secretary-Treasurer; and Dr. W. P. Dailey, and Dr. R. F. Linn, members of the executive committee. Upon the untimely death of Dr. M. A. Novey, (about six weeks following his election) Dr. J. E. Savage was elected by mail ballot to fill his unexpired term. In accordance with the provisions of the constitution, Dr. I. A. Siegel was elected to associate membership.

In conjunction with the International and Fourth American Congress of Obstetrics and Gynecology in New York, the second annual meeting was held during dinner at the Hotel New Yorker on May 17, 1950. At this time the scientific session was omitted. The original group of officers was continued in office for another year. Eighteen members attended.

On the morning of July 16, 1949, Dr. Novey suffered a second thrombosis of the coronary artery, and less than an hour later, died.

Thus, at the age of 49, there was terminated the career of one, who in every sense of the word, deserved the title of physician.

The Novey Memorial Room in the University Hospital made possible by contributions of fraternity brothers, and friends of Dr. M. A. Novey and the Dougtricians, was the scene of the third annual meeting on June 6, 1951. Twenty-seven members were present and three scientific papers were read. Dr. Margaret B. Ballard became an associate member. With the exception of Dr. H. B. McNally, who replaced Dr. R. F. Linn as a member of the executive committee, the original officers were again re-elected to their respective positions. At a delightful dinner at the Southern Hotel, Dr. Ruben Steinemyer, Professor of Politics and Government at the University of Maryland, spoke entertainingly on his recent travels in Great Britain.

The fourth annual meeting was held on June 4, 1952 in the Novey Memorial Room of the University Hospital with twenty-four members in attendance. Six scientific papers were given. The following officers were elected: Dr. W. P. Dailey, President; Dr. D. F. Kaltreider, Vice-President; Dr. G. H. Davis, Secretary-Treasurer; and Dr. H. B. McNally and Dr. C. L. Goodhand, members of the executive committee. The Southern Hotel was again the site of the annual dinner when Dr. Richard Weigle, President of St. Johns College, Annapolis, Maryland, addressed the group on the subject: "The History and Aims of St. Johns College".

On June 12, 1953, the fifth annual meeting was convened in the Novey Memorial Room of the University Hospital, there being thirty-five members present. Six scientific papers were delivered. Officers elected were: Dr. J. E. Savage, President; Dr. D. I. Dann, Vice-President; Dr. G. H. Davis, Secretary-Treasurer; and Dr. W. P. Dailey, Dr. W. E. Hoffman, and Dr. D. F. Kaltreider, members of the executive committee. Miss Raj Chawla, of India, was the after-dinner speaker at the dinner held at the Park-Plaza Hotel. She spoke most informatively of the past, present and future of her native country.

The sixth annual meeting was held on May 21, 1954 in the Novey Memorial Room of the University Hospital with twenty-three members in attendance. Six scientific presentations were discussed at some length. Dr. H. B. McNally was elected President, with the following members also elected to their respective offices: Dr. A. Baptisti, Vice-President; Dr. J. K. B. E. Seegar, Jr., Secretary-Treasurer; and Dr. G. H. Davis, Dr. R. L. Goyne, and Dr. J. E. Savage, members of the executive committee. At the dinner at the Southern Hotel, The Hon. James P. Devereaux, Member of Congress from Maryland, spoke very interestingly of his recent official trip around the world as a member of a Congressional Committee.

In the first few days after each annual meeting, the President has always received a "thank you" letter from Dr. Douglass, the honored guest at each meeting. Typical of these letters is the following one written after the fifth annual meeting:

Dr. W. Paul Dailey
Retiring President
The Dougtricians

My dear Paul:

Will you please convey to the other members of your organization my deep and sincere thanks for a very wonderful day last Friday. I wish that I had the ability to put into words my gratitude, my humbleness and sense of unworthiness for the great honor you confer upon me annually, but I can't do it. Nor can I begin to tell you how much I look forward to these meetings and the opportunity to see you all once more and renew old friendships.

I am immensely proud of each and every one of you, proud of what you have made of yourselves, of the positions you occupy in your own communities and proud of the advances you have all made in obstetrics. I am content.

May the good Lord bless and keep each and everyone of you and permit you to fulfill your destiny.

Gratefully and sincerely,
signed: LOUIS H. DOUGLASS

DOUGTRICIANS
DR. DOUGLASS' RESIDENTS IN OBSTETRICS
University Hospital



J. Morris Reese, M.D., Resident, University Hospital, 1921-22. 101 West Read Street, Baltimore 2, Maryland.

U.S. Naval Reserve, 1917-1921. Associate Professor of Obstetrics, University of Maryland, School of Medicine. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Councilor from Maryland, Southern Medical Association. Fellow, American Academy of Obstetrics and Gynecology.



Thomas Norwood Wilson, M.D., Resident, University Hospital, 1922-23. 617 W. Fortieth Street, Baltimore 11, Maryland.

Private practice.

Frederick A. Snyder, M.D., Resident, University Hospital, 1925-26. 6323 Iris Avenue, Cincinnati 13, Ohio.

Retired.

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Eva F. Dodge, M.D., Resident University Hospital, 1926-27. Twelfth and McAlamont Sts., Little Rock, Arkansas.

Associate Professor of Obstetrics and Gynecology, University of Arkansas School of Medicine. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Fellow, Central Association of Obstetricians and Gynecologists. Fellow, American Academy of Obstetrics and Gynecology. Pan-American Medical Women's Association.



Willbur E. Hoffman, M.D., Resident, University Hospital, 1929-30. 1031 Quarrier St., Charleston, West Virginia.

Chief of Obstetrics, Charleston General Hospital. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology.

W. Paul Dailey, M.D., Resident, University Hospital, 1930-32. 901 N. Second St., Harrisburg, Pennsylvania.

Clinical Professor of Obstetrics, Hahnemann Medical College. Director, Department of Obstetrics and Gynecology, Harrisburg Hospital. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Fellow, International College of Surgeons. Fellow, American Academy of Obstetrics and Gynecology.



John E. Savage, M.D., Resident, University Hospital, 1934-35. 6 East Read Street, Baltimore 2, Maryland.

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William A. Hart, M.D., Resident, University Hospital, 1932-33. 1226 Pickens Street, Columbia, South Carolina.

Obstetrical Staff, Providence, Columbia and Baptist Hospitals. Fellow of the Academy-International of Medicine. Fellow, South Atlantic Association of Obstetricians and Gynecologists.

E. Newton DuPuy, M.D., Resident, University Hospital, 1935-36. 1842 Grove Avenue, Quincy, Illinois.

Army of the United States, 1942-1946. Lt. Col., M.C., U.S.A.R. Chief of Obstetrics and Gynecology, Blessing Hospital. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Fellow, Central Association of Obstetricians and Gynecologists. Fellow, American Academy of Obstetrics and Gynecology.



Hugh B. McNally, M.D., Resident, University Hospital, 1936-37. 101 West Read Street, Baltimore 1, Maryland.

Assistant Professor of Obstetrics, University of Maryland School of Medicine. Chief of Obstetrics, Bon Secours Hospital. Chief of Obstetrics, St. Agnes Hospital. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Alpha Omega Alpha. Fellow, American Academy of Obstetrics and Gynecology.



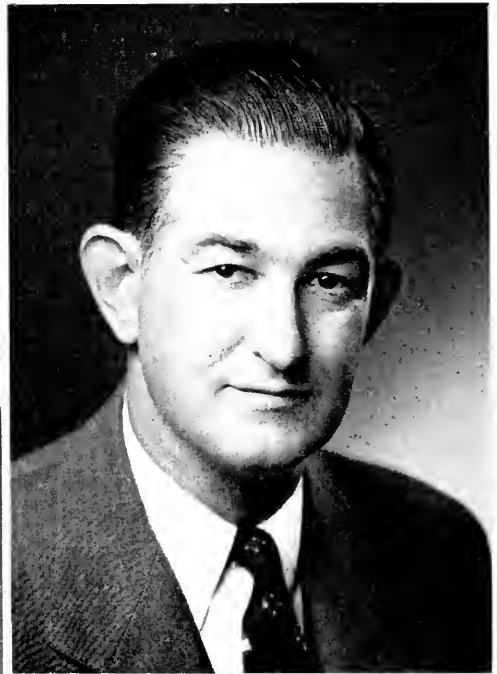
Charles K. Fetterhoff, M.D., Resident, University Hospital, 1937-38. 115 North Street, Harrisburg, Pennsylvania.

Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.

John W. Albrittain, M.D., Resident, University Hospital, 1938-39. Bethesda Naval Hospital, Bethesda, Maryland.

Commander, M.C., U.S.N. Fellow, American Academy of Dermatology and Syphilology. Diplomate, American Board of Dermatology and Syphilology. Chief of Dermatology, Bethesda Naval Hospital.

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J. King B. E. Seegar, Jr., M.D., Resident, University Hospital, 1940-41. 2 West Read St., Baltimore 1, Maryland.

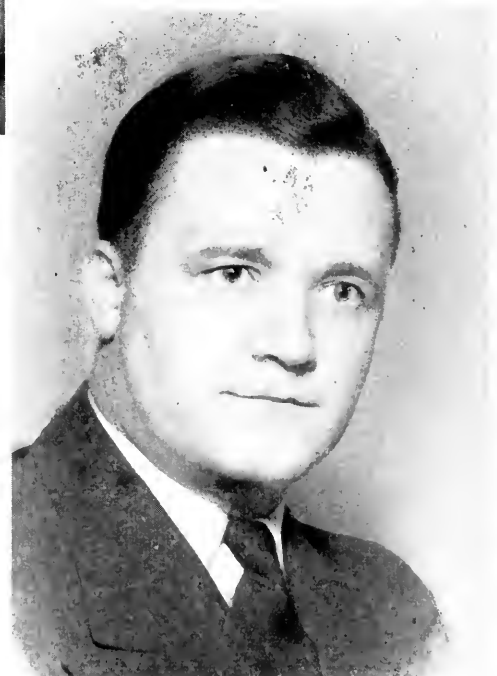
Army of the United States, 1942-1946. Associate in Obstetrics, University of Maryland School of Medicine. Chief of Obstetrics, South Baltimore General Hospital. Chief of Obstetrics, Church Home and Hospital. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.



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Associate in Obstetrics, University of Maryland School of Medicine. Chief of Obstetrics, Maryland General Hospital. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.

Richard L. Goyne, M.D. Resident University Hospital 1942-43. 122 Locust Street, Harrisburg, Penna. Clinical Professor of Obstetrics Hahnemann Medical College, at Harrisburg Hospital. Consultant to the Surgeon, Second Army.





John H. Morrison, M.D., Resident, University Hospital, 1943-44. 707 Chumleigh Road, Baltimore 12, Maryland.

United States Public Health Service, 1944-1946. Associate in Obstetrics, University of Maryland, School of Medicine. Member, Active Staff, Hospital for the Women of Maryland. Diplomate, American Board of Obstetrics and Gynecology.



George H. Davis, M.D., Resident, University Hospital, 1943-44. 6 East Read St., Baltimore 2, Maryland.

Army of the United States, 1944-1946. Associate in Obstetrics, University of Maryland, School of Medicine, Chief, Division of Maternal Hygiene, Baltimore City Health Department. Member, Subcommittee, Maternal Mortality, American Committee on Maternal Welfare. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.



Schuyler G. Kohl, M.D., Resident, University Hospital, 1943-44. 451 Clarkson Avenue, Brooklyn 3, New York.

Army of the United States, 1944-1946. Associate Professor of Obstetrics and Gynecology, State University of New York, College of Medicine. Diplomate, American Board of Obstetrics and Gynecology.

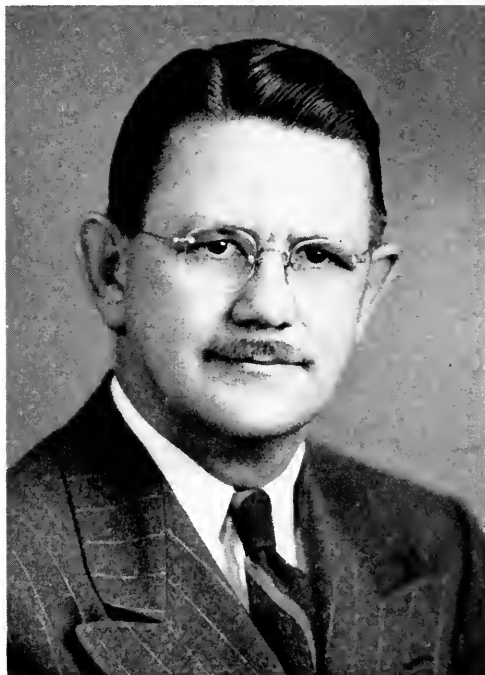
Thomas B. Dunne, M.D., Resident, University Hospital, 1944-45. Oakland, Maryland.

Deputy State Health Officer; and Health Officer, Garrett County.

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Alma B. Kelly, M.D., Resident, University Hospital, 1944-45. 1321 Park Avenue, Baltimore 17, Maryland.



C. Louis Jorgensen, M.D., Resident, University Hospital, Oct., 1945-June, 1947. 2838 Marilyn Drive, Ogden, Utah.

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Lorman L. Hoopes, M.D., Resident, University Hospital, 1947-48. 17-A South Main Street, Minot, North Dakota.

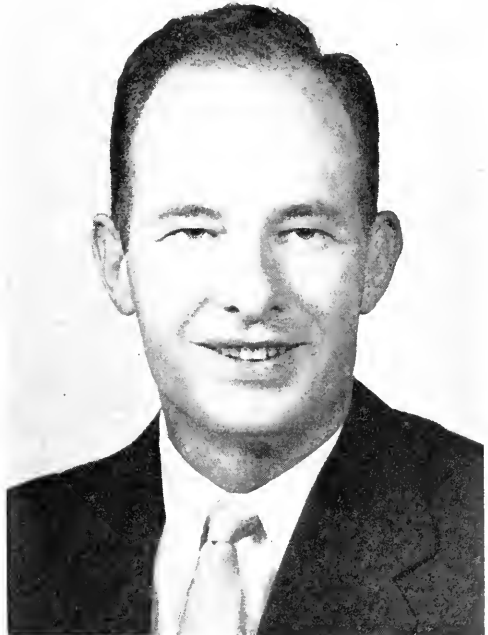
Army of the United States, 1942-1946. Chief of Obstetrics and Gynecology, St. Joseph's Hospital. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.



James H. Graves, M.D., Resident, University Hospital, 1948-1949, 511 West Main Street, Owosso, Michigan.

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William C. Covey, Jr., M.D., Resident, University Hospital, 1950-51. Beckley, West Virginia.
United States Navy, 1945-1946; 1952-1954.
Private practice.



S. Malone Parham, M.D., Resident, University Hospital, 1951-52. 523 S. Chestnut St., Henderson, North Carolina.
United States Air Force, 1946-1948. Private practice.



Benson Schwartz, M.D., Resident, University Hospital, 1952-53. Lake Charles Air Force Base, La.

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DOUGTRICIANS

DR. DOUGLASS' RESIDENTS IN OBSTETRICS Baltimore City Hospitals



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Louis C. Gareis, M.D., Resident, Baltimore City Hospitals, 1942-43. 1651 Northwick Court, Baltimore 18, Maryland.

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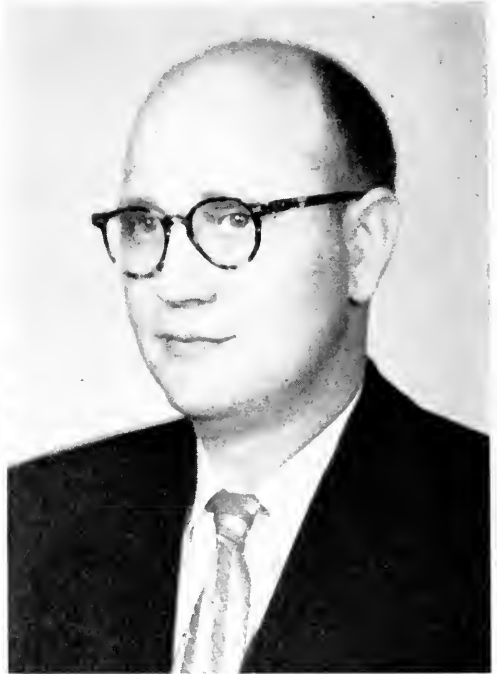
T. Edgie Russell, M.D., Resident, Baltimore City Hospitals, 1943-44. 3901 N. Charles Street, Baltimore 18, Maryland.

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Harry Donohoo, M.D., Resident, Baltimore City Hospitals, 1944-45. 126 East 15th Street, Chester, Pennsylvania.

Private practice.



Henry B. Perry, Jr., M.D., Resident, Baltimore City Hospitals, 1945-46. 344 North Elm Street, Greensboro, North Carolina.

Served in United States Naval Reserve. Visiting Staff, Moses H. Cone Memorial Hospital and Wesley Long Hospital.



J. Tyler Baker, M.D., Resident, Baltimore City Hospitals, 1946-1948. U. S. Army Hospital, Fort Dix, New Jersey.

Army of the United States, now on active duty. Associate in Obstetrics, University of Maryland School of Medicine. Chief of Obstetrics and Gynecology, Memorial Hospital, Easton, Maryland. Chief of Obstetrics and Gynecology, U. S. Army Hospital, Fort Dix, New Jersey. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology.



Harry Cohen, M.D., Resident, Baltimore City Hospitals, 1948. 803 Cathedral Street, Baltimore 1, Maryland.

Army of the United States 1944-1946. Diplomate, American Board of Obstetrics and Gynecology. Fellow, American Academy of Obstetrics and Gynecology.



J. William Fetter, M.D., Resident, Baltimore City Hospitals, 1948-1949. 1511 Lakeside Avenue, Baltimore 18, Maryland.

Served in the United States Naval Reserve; recently honorably discharged.



Ronald H. MacPherson, M.D., Resident, Baltimore City Hospitals, 1948-50. 1019 Fifteenth Street, East, Saskatoon, Saskatchewan, Canada.

Royal Canadian Army Medical Corps, 1942-1946. Attending Obstetrician and Gynecologist at St. Paul's and City Hospitals. Fellow, Royal College of Surgeons of Canada.



John G. Ritzenthaler, M.D., Resident, Baltimore City Hospitals, 1949-50. 1101 Mesa Verde Avenue, Farmington, New Mexico.

United States Army, Medical Corps, 1950-1954. Private practice.



Emerson F. Fackler, M.D., Resident, Baltimore City Hospitals, 1950-1952. 3834 Brishan St., Harrisburg, Pennsylvania.

Army of the United States, 1942-1946. Assistant in Obstetrics and Gynecology, Harrisburg Polyclinic Hospital.



Alfred R. Jones, M.D., Resident, Baltimore City Hospitals, 1951, 50 Elm Street, Worcester, Massachusetts.

Served in United States Army, Medical Corps. Private practice.

Richard A. Raffman, M.D., Resident, Baltimore City Hospitals, 1952.

Resident, Orange Memorial Hospital, 188 Essex Avenue, Orange, Essex Co., New Jersey.

Photograph unavailable



Abraham Eisen, M.D., Resident, Baltimore City Hospitals, 1953. 806 Euclid Avenue, Toronto, Canada.

Resident in Gynecology, New York Polyclinic Postgraduate Medical School and Hospital, New York, N. Y.

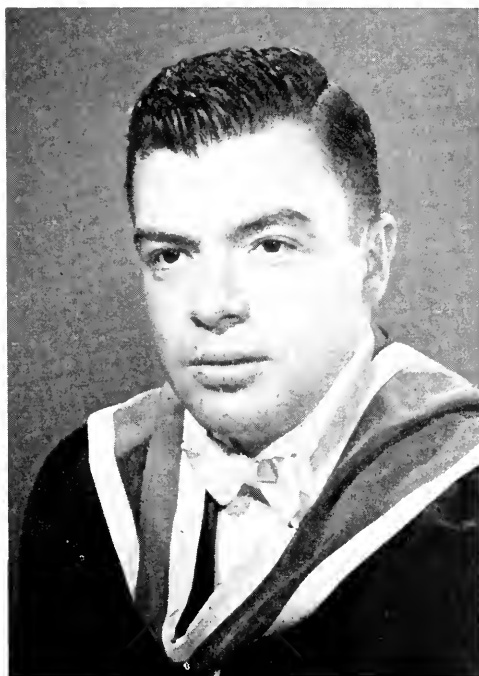
Louis L. Mould, M.D., C.M., Resident, Baltimore City Hospitals, 1954-55. 1023 Eastern Avenue, Baltimore 21, Maryland.

Royal Canadian Navy, 1943-1945. Resident in Obstetrics, Baltimore City Hospitals.



Leigh Brown, M.D., Resident, Baltimore City Hospitals, 1953-54. Department of Surgery, Kingston General Hospital, Kingston, Ontario, Canada.

Served in the Royal Canadian Army Medical Corps.



DOUGTRICIANS
HONORARY MEMBERS



Margaret B. Ballard, M.D. 101 West Read Street, Baltimore 1, Maryland.
Private practice.



Isadore A. Siegel, M.D. Latrobe Building, Charles and Read Streets, Baltimore 2, Maryland.

Associate Professor of Obstetrics, University of Maryland, School of Medicine. Lecturer in Obstetrics, School of Medicine, Johns Hopkins University. Chief of Obstetrics, Sinai and Director of Obstetrics and Gynecology, Franklin Square Hospitals. Secretary-Treasurer, Baltimore Rh Typing Laboratory, Inc. Fellow, American College of Surgeons. Diplomate, American Board of Obstetrics and Gynecology. Founding Fellow, American Academy of Obstetrics and Gynecology.

DOUGTRICIANS

Deceased Members



M. Alexander Novey, M.D., Resident, University Hospital, 1924-1925. Practiced in Baltimore, Maryland. Died July 18, 1949, aged 49.



Knight Reynolds, M.D., Resident, University Hospital, 1927-1928. Practiced in Cumberland, Maryland. Died February 5, 1947, aged 47.



Bernard W. Donohue, M.D., Resident, University Hospital, 1933-1934. Practiced in Baltimore, Maryland. Died August 19, 1944, aged 39.



Robert F. Linn, M.D., Resident, University Hospital, 1941-1942. Practiced in Cleveland, Ohio. Died September 26, 1950, aged 40.

MEDICAL SCHOOL SECTION

DR. ROBINSON RETIRES AS DERMATOLOGY CHIEF

Dr. Harry M. Robinson, Sr., since 1937 Professor of Dermatology at the School of Medicine, retired as Professor and Chairman of the Department on his 70th birthday, September 14, 1954, climaxing a very active 10 years of 45 years in the service of the School of Medicine.

Dr. Robinson was graduated in the class of 1909 and was a classmate of the late Dr. Fred W. Rankin. Shortly after his graduation he became interested in the specialty of dermatology and worked with both Drs. Keidel and Gilchrist at the Johns Hopkins Hospital. He was also active in the outpatient clinic at Johns Hopkins and the University of Maryland. He was among the first physicians in the United States to adopt the intravenous use of arsphenamine in the treatment of syphilis. Dr. Robinson also became very adept at the practice of venipuncture, and devised a practical method which has received wide professional adoption.

An active teacher and investigator, his chief interests were directed toward re-



search in syphilis, lymphopathia venerea and with regard to the therapy of many of the dermatoses. He was the author of some 35 publications dealing with dermatologic problems and published a textbook. The first edition appeared in 1933, and underwent several revisions.

Dr. Robinson will be remembered at the School of Medicine for his dynamic approach to dermatologic problems and for his well operated clinic. Students may recall the orderly confusion of signal bells, students, faculty and lines of patients awaiting intravenous injection or examination, the professor wading systematically and knowingly through the throng, sleeves rolled and wrists slightly flexed, stroking his face with the back of his hand, fingers directed away from face.

Dr. Robinson's retirement connotes not only his scientific interest and his ability as a teacher but his devotion to the University and its Outpatient Clinic.

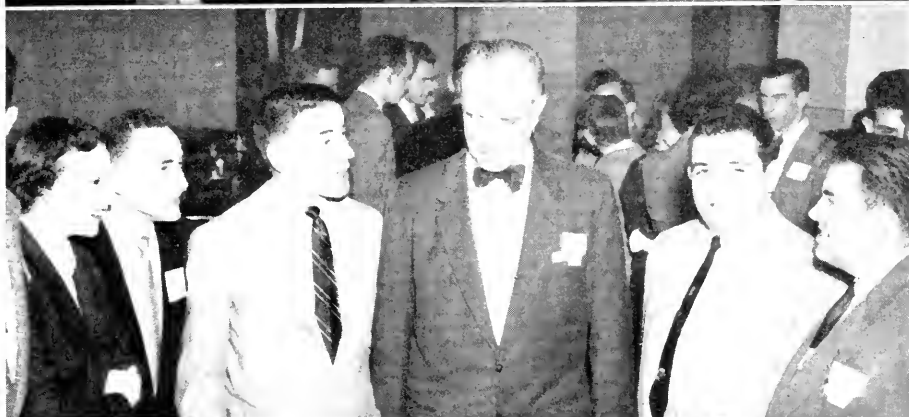
DR. VAN BUSKIRK NAMED PROFESSOR OF NEUROLOGY

Former Minnesota Professor Becomes Professor of Neurology at the School of Medicine

Dr. Charles Van Buskirk formerly Assistant Professor of Neurology at the University of Minnesota was named Professor of Neurology at the School of Medicine, Dr. Van Buskirk assuming his duties as of July 1, 1954. His appointment thus opens the way for a complete reorganization in the neurological sciences and for the development of a residency program, for expansion of undergraduate teaching and for development of post graduate education in the neurologic sciences.



DR. CHARLES VAN BUSKIRK



L to R.: John Orth, John R. Day, Jay T. Rauh, Dr. William H. Triplett, Dr. John A. Wagner, John S. Harshey

L to R.: Arthur Litofsky, Daniel M. Levin, Nicholas R. Bachur, Dr. William S. Stone, Maurice J. Berman, Dr. Frank H. J. Figge

Charles E. Parker, President of the Freshman Class

Dr. Van Buskirk who is a veteran of World War II received his preliminary education at Westminster College in Fulton, Missouri, later completing a master's degree in microanatomy at the St. Louis University. Following his graduation from St. Louis University he took graduate work at the University of Minnesota receiving a Ph.D. degree in anatomy. He is a graduate in medicine of the Albany Medical College in Albany.

Dr. Van Buskirk then took his training in neurology at the University of Minnesota under Dr. A. B. Baker and was awarded a master of science degree in neurology. Following his graduation in neurology at the University of Minnesota he served successively as Instructor in Neurology and Assistant Professor before being named to the post at the University of Maryland.

FIRST STUDENT-FACULTY RECEPTION A SUCCESS

Some 150 members of the class of 1958 and members of the Faculty of the School of Medicine gathered in the main dining room of the University Hospital on December 9, 1954 for the first Student-Faculty Reception.

This reception jointly sponsored by the Faculty of Medicine and the Medical Alumni Association was for the purpose of bringing into closer contact the members of the faculty and the newly arrived student. The reception, a success in its first venture will be repeated in the earlier months of the academic year and next year will include both members of the incoming first year class and the current first year class, by then in its second year.

MERCY HOSPITAL SECTION

DEPARTMENT OF PATHOLOGY

Dr. C. Gardner Warner, Chief of the Pathology Department, recently returned from a convention trip in the Southwest and Middlewest. His itinerary included attendance and participation in the Eleventh Annual Tumor Seminar at the Brooke Army Hospital, Fort Sam Houston, Texas, and the Forty-eighth Annual Convention of the Southern Medical Association at St. Louis, Missouri.

During his stay in Texas, Dr. Warner had the opportunity of visiting Captain James Russo, Former Chief of Anesthesiology at Mercy Hospital. Captain Russo was going through Army medical indoctrination at Fort Sam Houston.

DEPARTMENT OF GYNECOLOGY AND OBSTETRICS

Dr. Gerald A. Galvin of the Visiting Staff, attended the Sixth American Congress on Obstetrics and Gynecology at the Palmer House in Chicago from December 13-17, 1954. Dr. Galvin participated in a panel discussion on Carcinoma of the Cervix.

Other members of the Visiting Staff who attended the congress were Drs. John Erwin, William Dodd, Anthony DiPaula, William Duffy, and William Rysanek.

ANTICOAGULANT LABORATORY

On January 22, 1955, Dr. Charles E. Brambel, Director of the Biochemical Laboratory, participated in the Symposium on Blood at Wayne University College of



L to R.: Daniel M. Levin, Maurice Berman, John J. Merendino, Ronald Diener, Howard Bronstein, Raymond Caplan, Dr. H. Boyd Wylie, Dean.
Mr. George H. Buck, Neil M. Goldberg

Medicine in Detroit. Dr. Brambel's contribution was a paper on "The Mechanism of the Action of the Anti-coagulant, Heparin."

DEPARTMENT OF OTOLARYNGOLOGY

Dr. Theodore A. Schwartz, chief of the Department of Otolaryngology, has announced the approval of the residency program by the American Board of Otolaryngology and the Council on Medical Education and Hospitals for 3 years of training in otolaryngology.

Drs. Charles R. Fravel, Katherine H. Borkovich and Samuel L. Fox, recently joined the Hospital Visiting Staff.

POST GRADUATE TRAINING PROGRAM

GYNECOLOGIC AND OBSTETRIC DEPARTMENTS

Present Conference Series

An extensive program on the detection, diagnosis, and treatment of gynecologic malignancies has been inaugurated by the Gynecologic and Obstetric Department of Mercy Hospital. The lectures, held every Wednesday in room 33 at 4 P.M., began on October 6, 1954, and will continue throughout the year until May, 1955.

Most of the lectures in the program were given by doctors associated with the Schools of Medicine Johns Hopkins University and the University of Maryland. Invitations to attend this program have been sent to the Gynecologic and Obstetric Visiting and House Staff members of all the hospitals in Baltimore City and throughout the state, as well as to all members of the Gynecologic Society. To date, the conferences have been well attended. The program was under the supervision of Dr. Frank K. Morris, Chief of Gynecology.

ARMED FORCES SECTION

On December 5, 1954, Dr. Frank Faraino reported for active duty with the Air Force at San Antonio, Texas. Dr. Faraino was a member of the Visiting Staff and served as Resident in Thoracic Surgery in 1952-53.

AUXILIARY NEWS

Newly elected officers of the Women's Auxiliary as of January 1, 1955, include Mrs. Gordon Armstrong who succeeded Mrs. Earl Chambers as President.

LUTHERAN HOSPITAL NEWS

Dr. W. Newton Long, Chief of Obstetrics at the Lutheran Hospital of Maryland has recently returned from service with the Federal Government and has announced the reopening of his office at 3332 St. Paul Street in Baltimore.

ANNUAL LUTHERAN HOSPITAL SYMPOSIUM

The annual Lutheran Hospital Medical and Surgical Symposium will be held at the hospital on Saturday, May 7, 1955 beginning at 9 A.M. All physicians, students and members of the Staff of the Lutheran Hospital and the School of Medicine are cordially invited to attend. As in the past, outstanding speakers of National recognition will be presented and a round table discussion will follow.

POST GRADUATE COMMITTEE SECTION

POST GRADUATE COMMITTEE, SCHOOL OF MEDICINE

HOWARD M. BUBERT, M.D., *Chairman and Director*

Elizabeth Carroll, *Executive Secretary*

Post Graduate Office: Room 600

29 South Greene Street

Baltimore 1, Maryland

UNIVERSITY OF MARYLAND NEWS SERVICE

For years the need for an information and news publication adapted to rapid preparation and prompt distribution has been recognized. In an effort to satisfy this need, the Postgraduate Committee has established, with funds made available by The Hearst Corporation, a modest periodical called NEWS SERVICE. The first number of this publication appeared in November 1954. It is planned to have further issues from time to time depending upon circumstances and the material available.

Mr. Thomas Orpwood of the Public Relations Department, is the editor of NEWS SERVICE and will welcome suggestions and comments. Material of general interest would be appreciated by Mr. Orpwood and is solicited. Please send all communications to Mr. Thomas Orpwood, Editor, Postgraduate Committee Office, 29 South Greene Street, Baltimore 1, Maryland.

POSTGRADUATE REGISTRY

In the October 1954 issue of the Bulletin, a report was given on a meeting held August 6, 1954 of the groups interested in postgraduate education in Maryland. These included representatives of five medical societies, the University of Maryland, Johns Hopkins University and Doctors Hospital. Later, a meeting of representatives from the Medical and Chirurgical Faculty, the Johns Hopkins University Medical School and the University of Maryland Medical School was held at the Medical and Chirurgical Faculty Building. The state society, together with the two medical schools, agreed to sponsor the publication of a monthly registry of postgraduate courses. This will be issued by the Medical and Chirurgical Faculty and financed jointly by that organization and the Postgraduate Committee of this medical school. Final approval was given the venture by the House of Delegates of the state society at their 1954 semi-annual meeting in Hagerstown. We are awaiting the appearance of this registry with great interest.

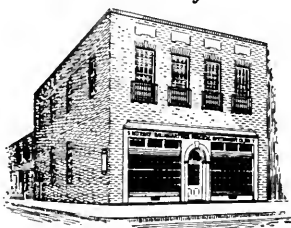
MEDICINE TODAY—AN ELECTRONIC MEDICAL JOURNAL

An entirely new idea in professional Postgraduate Medical Education is contemplated by The Williams & Wilkins Publishing Company. The project envisions

a monthly closed circuit telecast on a professional level to 25 major cities and it is estimated that it will reach a professional audience of 75,000 physicians. The sponsors of the series will be a group of pharmaceutical firms and will be produced by Medical Communications, Inc. The Williams & Wilkins Company will serve in the capacity of publishers. The Faculties of medical schools throughout the country will be invited to present individual programs. It is with pleasure that we announce that our school has been invited to participate. Because it represents postgraduate education, Dr. William S. Stone, Director of Medical Education and Research, has assigned the responsibility to this Committee, who voted unanimously to accept the invitation.

A list of possible subjects for presentation was selected and given to the publishers. We await with interest the further development of this novel approach to post-graduate education.

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PROCEEDINGS

of the

University of Maryland Biological Society

November 9, 1954. Annual Business Meeting. Bressler Library, School of Medicine.

Chief items of business transacted included:

1. Election of the following officers for the year 1954-55:

President—Edward Steers, Ph.D.

Secretary—Frank A. Dolle, Ph.D.

Treasurer—Donald E. Shay, Ph.D.

Councilor—Frederick P. Ferguson, Ph.D.

2. Announcement of the appointment by the Council of Dr. Vernon E. Krah1 as Editorial Representative of the Society to the Bulletin of the School of Medicine.
3. Election of eight nominees to ordinary membership and ten nominees to associate membership in the Society.

“Some observations on the amniotic fluid of the mouse” presented by Robert E. McCafferty, Ph.D., Department of Anatomy, School of Medicine. (See Abstract)

December 15, 1954. Bressler Library.

“An analysis of the putrescine requirement of *Hemophilus parainfluenzae*” by Edward J. Herbst, Ph.D., and Eleanor Bartlett Glinos, B.A., Department of Biological Chemistry, School of Medicine. (See Abstract)

January 12, 1955. Gordon Wilson Hall, University Hospital

“Control of potassium and other electrolyte balance in anuria” by Dr. William H. Meroney, Officer in Charge of Renal Metabolism Studies, Walter Reed Army Hospital, Washington, D.C.

ABSTRACTS

SOME OBSERVATIONS ON THE AMNIOTIC FLUID OF THE MOUSE.*† By Robert E. McCafferty, Ph.D., Department of Anatomy, School of Medicine, University of Maryland.

The role of amniotic fluid and the site of its production during fetal growth form the basis of this study. Pregnant mice were given single intraperitoneal injections of tracer doses of P^{32} and fluorescent dyes. In a second series these materials were injected into the amniotic sacs. Thus a quantitative pattern of flow and localization of material from the maternal to fetal, and then from the fetal to maternal systems were detected at intervals by radioautographic, counter, and ultraviolet methods.

It was shown that irregardless of whether the mother or the fluid of the amniotic sac was injected, the epithelial lining of the sac absorbed the injected material in relatively large quantities. The water soluble fluorescent dye was prevented from entering the fetal sac from the maternal system but the isotope entered the sac within an hour following maternal injection. The early fetus was found to acquire maternally injected P^{32} in about 25 minutes and in just 15 minutes obtained P^{32} from its own amniotic fluid. Possibly the amniotic contents were fed to the growing fetus by the vitelline circulation until the placenta became physiologically mature, continuing in a supporting role for a few days longer. These studies also revealed that the mouse placenta begins to function by the 12th day of gestation. Volume increases of amniotic fluid of the mouse were also taken and graphed relatively with the known data of eight other mammals. These changes placed mouse and man in a very similar curve pattern but the delay in initial development of the mouse was found comparable to the category of the guinea pig and the hamster.

AN ANALYSIS OF THE PUTRESCINE REQUIREMENT OF *Hemophilus Parainfluenzae*.‡

By Edward J. Herbst, Ph.D., and Eleanor Bartlett Glinos, B.A., Department of Biological Chemistry, University of Maryland School of Medicine.

Putrescine (1,4-butanediamine), 1,3-propanediamine and eighteen other compounds which can give rise to these diamines during metabolism have been identified as essential growth factors for *Hemophilus parainfluenzae*. The compounds appear to function as microbial vitamins, i.e., in minute catalytic amounts. As one phase of a program to ascertain the metabolic function of these new growth factors, analogues of putrescine were tested for activity as specific metabolic antagonists. Numerous analogues were growth inhibitors but the toxic effect of these compounds upon systems other than the putrescine systems limits their usefulness.

Other approaches to the problem of putrescine metabolism were outlined. Bacterial cells, rendered "deficient" in putrescine by treatment with salt solutions are being utilized for investigations of the effect of supplemental putrescine on specific enzyme systems.

* This work was supported by a grant from the National Institutes of Health.

† Presented November 9, 1954.

‡ Presented December 15, 1954.

ALUMNI ASSOCIATION SECTION

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* July 1, 1954 to June 30, 1955

CORRECTION

In the January, 1955 number of the Bulletin of the School of Medicine, the President's Letter in the Alumni Association Section was printed over the name of Dr. William R. Geraghty. Dr. Frank J. Geraghty is President of the Medical Alumni Association. The Bulletin sincerely regrets the error.

PRESIDENT'S LETTER

To: Dr. Douglass

Forty-three years is a long time to be connected with an educational institution. The years leave their impression on the individual and he leaves his imprint on the institution.

Dr. Douglass has been teaching obstetrics to students at the University of Maryland School of Medicine since 1911. In one of these classes I had the privilege of exposure to his expoundings on the intricacies of obstetrical practice. A sincere teacher, overwhelmingly enthusiastic and interested in his subject and insistent that his students be well versed in all of the fundamentals of this subject. The students have a keen appreciation of his ability to teach and take his pungent remarks as part of the course.

As a former President of the Alumni Association Dr. Douglass manifested the same enthusiasm in the affairs of this organization. In his quiet but emphatic manner he always has that concrete poignant suggestion for improvement in policy, school-alumni relationship or nation-wide meeting get-togethers.

As the first full time Professor of Obstetrics he has carried this department to its

present lofty peak. His departmental associates have imbibed his enthusiasm; his students have profited from his love of his subject and his desire and skill in teaching it; the alumni membership can point with pride to his accomplishments.

Congratulations on a job well done and at the same time a request for continued activity in the affairs of the Alumni Association.

FRANK J. GERAGHTY, M.D., *President*
Medical Alumni Association

November 19, 1954.

A REPORT TO ALUMNI

Dear Members of the Alumni of the School of Medicine:

Starting with this issue of the Bulletin I will attempt to keep you informed about significant matters involving the Medical School.

Because of the publicity given accreditation I am sure that you are concerned to know what is being done to present the Medical School and University in a more favorable light.

There has been much progress in medicine since the University Hospital was built in 1932. Antibiotics and other improvements have reduced hospital stay by more than 50% for most causes of hospitalization. Because of the newness of the University Hospital during the period of WWII and the need to improve other colleges and schools of the University, it was not until 1952 that further hospital additions could be provided for and in that year the Psychiatric Institute was built. This provided facilities for the most up to date study and treatment of mental diseases, and also facilities for research investigation to provide much needed new information on abnormalities of the mind and central nervous system.

Appropriations are being sought from the State Legislature and through the Hill Burtin Federal Assistance Program for improving the University Hospital operating rooms, obstetrical delivery rooms, central sterile supply, recovery rooms, and anesthesia induction rooms, as well as additions to the Department of Radiology and improving the accident room, food service and pharmacy. Money is also being sought from the State to acquire additional ground for a new library which we hope will be authorized and constructed during 1957-58.

With the impending retirement of Dean Wylie, Dr. Reid Edwards, Dr. Uhlenhuth and Dr. Douglass, faculty committees have been appointed and are actively screening candidates for appointment of a new dean and professors of surgery, ophthalmology, obstetrics and anatomy.

A new Curriculum Committee with Dr. Theodore E. Woodward as Chairman has been appointed and a careful study is being made of other institutions' as well as Maryland's experience in drawing up a revised curriculum for the Medical School. It is expected that a greater integration of clinical medicine and the basic sciences will be possible and more electives made possible for the junior and senior years.

If the asking budget for the Medical School and Hospital is approved at Annapolis, it will be possible to strengthen most departments and improve the teaching at City Hospital, Mercy Hospital and Kernan Hospital. These improvements, if obtained,

will provide for outstanding teaching of clinical medicine to undergraduates and house staffs.

Recently a Master Planning Committee has been appointed by President Elkins to draw up long term objectives for construction on the Baltimore Campus. Two meetings have been held by this committee and before long we will be able to give you an idea of the recommended development during the next 20 years of each of the professional schools and the University Hospital.

During this year research grants amounting to \$530,162 have been in effect in the Medical School. Active programs of investigation are underway in almost every department. It now seems probable that the research program will grow rapidly because of the real interest of many members of the faculty. A number of additional research grants from outside sources are pending and the total program for next year will be the largest in the Medical School's history.

So much has been said in the public press about accreditation of the Medical School that it appears undesirable to continue debate in that media at this time. During the Spring of 1956 the School of Medicine will come up for reexamination for accreditation. We believe that our house will be in order and should win praise from the examiners.

No responsible informed person can draw any other conclusion than that the University of Maryland School of Medicine is presenting and has presented a medical education of high quality to its students and that its graduates measure up as physicians with those of the best schools in the U. S. It is an accredited School of Medicine and will always be one, for our standards are high by our own choice.

William S. Stone, M.D.

*Director of Medical Education
and Research.*

MAJOR GENERAL GEORGE W. RICE TO RECEIVE ALUMNI HONOR AWARD

Major General George W. Rice, M.C., USA, (ret'd) was recently nominated the recipient of the 1955 Alumni Honor Award and gold key. General Rice will receive his honor at the Alumni Association activities on June 2, 1955.

General Rice was born in Cumberland, Maryland on October 1, 1892. He graduated from the School of Medicine in the class of 1916. On June 22, 1916 he was commissioned a first lieutenant in the Medical Corps of the old Maryland National Guard and was ordered into Federal Service on June 29, 1916. After a period of active duty in Mexico he became a member of the Officers Reserve Corps and was subsequently commissioned a first lieutenant in the Regular Army in 1918. At the conclusion of World War I he was promoted to Captain and successively through the several grades to that of Brigadier General in May, 1948 and Major General in May, 1949.

General Rice's service as an Army Medical Officer took him to various parts of the world including the Philippine Islands, the Continental United States and the Southwest Pacific Area. At one time he served as instructor of medical units with the 29th Infantry Division at Baltimore, Maryland. As an instructor in Military Medi-



Maj. Gen. George W. Rice, M.C., U.S.A. (Ret.)

ine as applied to Field Service he enjoyed the confidence of both students and associates. When assigned by the War Department as the Surgeon, United States Army Forces in Australia in December, 1941, he was Director of the Department of Training and Assistant Commandant of the Medical Field Service School at Carlisle Barracks, Pennsylvania.

In 1942 he left for the Southwest Pacific Area arriving in Melbourne, Australia in January, assuming duties as a surgeon with the United States Forces in Australia. Shortly thereafter he was designated Surgeon of Base Section III, Brisbane, Australia, serving in these capacities for a period of 8 months. In September 1942 he was assigned as Service Command Surgeon, Baltimore, Maryland, holding that post until June, 1946. From June, 1946 until May 3, 1948 he held the position of Army Surgeon, Headquarters Second Army, Fort George G. Meade, Maryland. On May 3, 1948 he was assigned as Chief Health Officer, the Panama Canal, a position he held until reassigned to Brooke Medical Center, San Antonio, Texas, for purpose of retirement.

General Rice holds the Bronze Star Medal for meritorious achievement in connection with military operations against the Japanese; the Air Medal, the Legion of Merit for exceptionally meritorious conduct in performance of outstanding services in the Philippine Islands; the Army Commendation Ribbon; the Distinguished Service Medal for exceptionally meritorious and distinguished service in positions of great responsibility in the Southwest Pacific Area.

Dr. Rice's professional activities have been broad and intense, devoting the greater part of his Army career to Medical Field Service and Public Health. During World

War II he served with distinction as the chief medical officer on the staff of General Douglas MacArthur. During the early phases of the campaign he provided for the establishment of eight 1000-bed hospitals as well as a large medical depot and numerous dispensaries, being largely responsible for the success of the medical efforts which supported critically important combat operations in New Guinea. He assured the forwarding of medical supplies to guerilla forces in the Philippine Islands and initiated exceptionally effective rail, water and air evacuation systems throughout Australia and Allied-held sections of New Guinea. He rendered outstanding services in directing measures which effectively reduced malaria and sick rates. He created the Combined Advisory Committee on Tropical Medical Hygiene and Sanitation, guiding its initial and subsequent activities with rare skill and understanding. He also initiated a program whereby landing ships were successfully converted for use as hospital ships. As the senior medical member of the Allied Prisoner of War Committee, he provided for the processing and medical care of more than 20,000 Allied Prisoners of War.

In 1948 he was selected by the Governor of the Panama Canal to head the Canal's important Health Bureau which included not only hospitals and dispensaries but Administrative Public Health and Preventive Medicine.

Dr. Rice is currently serving as City Health Officer of the City of San Antonio, Texas. He is a member of the American Medical Association, the Army-Navy Club of Washington, D.C. and is a Director of the Gorgas Memorial Laboratory, Republic of Panama.

ALUMNI DAY JUNE 2 TO FEATURE COLOR-TV CLINICS

Faculty, Alumni Association and General Practice Academy to sponsor clinics

Alumni Day activities on June 2 this year will include a closed-circuit color telecast of clinical interest as well as other traditional activities, according to a joint statement issued through Dr. William H. Triplett, Director of the Alumni Association and Dr. Howard M. Bubert, post-graduate Committee Chairman. The colorcast will be the first offered in the Baltimore area using the new RCA compatible system for the presentation of clinical material.

Following the customary registration, members of the Alumni will view three hours of closed circuit teleclinics from the studios of WBAL-TV in Baltimore, and also by remote connection from the operating room of the University Hospital. Following the clinical presentation, there will be the customary Alumni Luncheon, meeting of the Alumni Association and the presentation of the Alumni Honor Award and Gold Key to General George W. Rice.

In the afternoon, class reunions will follow, and the evening activities will be climaxed by the Alumni Dinner Dance at the Lord Baltimore Hotel. At this function, honored guests will be the members of the class of 1955, and the 50-year graduates of the University of Maryland, the Baltimore Medical College and the College of Physicians and Surgeons who will be presented their Fifty-year Diplomas by Dr. Frank Geraghty, President of the Medical Alumni Association.

All of the Clinical Proceedings during the morning sessions will be under joint sponsorship of the Medical Alumni Association, the Post-Graduate Committee of the School of Medicine and the Maryland Academy of General Practice. The clinical

colorcast will be made possible through a grant from the Read Drug Stores of Baltimore and through the cooperation of station WBAL-TV.

FIFTY YEAR GRADUATES TO BE HONORED AT EXERCISES JUNE 2, 1955

The following alumni have been especially invited to be present at the exercises where they will be presented their fifty year certificates.

University of Maryland

Julian W. Ashby	Edwin F. Fenner	James J. Matthews
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Ira Burns	Henry H. Hodgkin	Benjamin F. Tefft
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Louis Drosin	Edward W. Markens	Thomas F. Warren

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Samuel P. Brinker	Daniel P. Mahoney	Fred C. Shumacher
Elijah E. Clovis	Francis E. Martin	Ernest F. Smith
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William R. Hanrahan	William N. Palmer	Robert Wriston
I. Dana Kahle	Fayette E. Read	



MEDICAL SCHOOL SECTION

DR. WILLIAM S. STONE NAMED DEAN

As a result of a recent action of the President of the University and Board of Regents, Dr. William S. Stone, Director of Medical Education and Research was nominated Dean of the School of Medicine to succeed Dr. H. Boyd Wylie who retired July 1, 1955. Dr. Stone's new office will include both the responsibilities of the Director of Medical Education and Research as well as those of the Dean of the School of Medicine.

DEAN'S LETTER TO THE ALUMNI

July, 1955

During the past six months the University as a whole has been engaged in revising its faculty government and by-laws. Studies have been made of other universities as well as incorporating the ideas of the faculty and established protocol of the University. A Medical School Faculty Committee, Chairmanned by Dr. George H. Yeager is in the process of revising the by-laws of the Medical School. It is anticipated that a much closer administrative and professional relationship will be established between the Medical School and the University Hospital. Administratively the Director of the University Hospital will be under the Dean of the Medical School and the professional policies of the University Hospital will be controlled by the Clinical Faculty of the Medical School and the Dean of the Medical School. These lines of control should improve the standards of professional education and patient care.

A modest increase was received in the funds appropriated for postgraduate education in the Medical School. One of the increases was for a full time individual to assist Dr. Howard M. Bubert in presenting the postgraduate programs planned and to gain information through personal contacts with practicing physicians in the State on the needs for postgraduate education. It is expected that this phase of the postgraduate program will come into operation in September or October of this year when further announcements will come from the Postgraduate Committee.

There are many changes taking place in the Faculty due to retirements, and in addition the curricula will be considerably revised by September 1955. As most of these changes are associated with the school or fiscal year, I am unable to bring you details of the changes until the October publication of the *Bulletin*. I will then summarize the developments for your information.

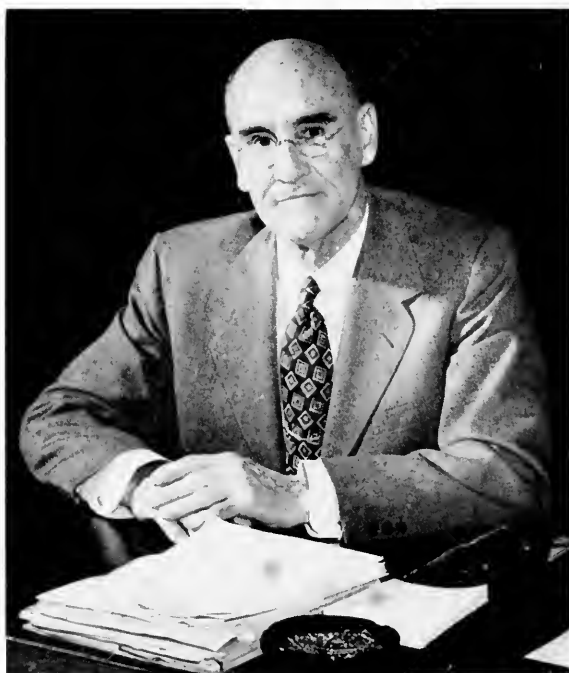
WILLIAM S. STONE, M.D.
DEAN

DEAN WYLIE RETIRES

Dr. Hamilton Boyd Wylie, Dean of the School of Medicine and veteran member of the Medical Faculty retired on July 1, 1955 after a term of service in the School of Medicine covering a span of nearly half a century.

Dean Wylie who began his career at the School of Medicine in 1913 as an Associate in Physiological Chemistry and retires as Dean of the Faculty, can be listed as a physician who has devoted long years with intense interest and loyalty to the faculty. He has served well in behalf of the many hundreds of students that have passed through the institution during his tenure.

Dean Wylie is an alumnus of Johns Hopkins University (1905-08) and was graduated from the Baltimore Medical College in the class of 1912. Shortly thereafter he became associated with the School of Medicine of the University of Maryland. He was first a teacher in the Physiological Chemistry and Pharmacology Departments, serving successfully as Assistant in Clinical Pathology and Pharmacology; Demonstrator of Clinical Pathology; Associate in Physiologic Chemistry, Pharmacology and Clinical Pathology; Associate Professor of Physiological Chemistry and Pharmacology and later Professor of Biologic Chemistry, an appointment he held from 1919 until his nomination as Acting Dean. This appointment followed the retirement of the late James M. H. Rowland who was his predecessor in office. Dr. Wylie served as Assistant Dean from 1942 through 1946 during the tenure of the late Dr. Robert U. Patterson as Dean. He then became successively Acting Dean and later Dean of the School of Medicine.



Dean H. Boyd Wylie

As Professor of Biological Chemistry Dr. Wylie's chief scientific interest lay in hormone determinations. He reflected his intense and continued interest in medical education through his zeal in the organization of a curriculum in this department.

Upon his assumption of the duties of Dean he was largely responsible for the organization of the Committee on Admissions, a committee responsible for the elevation of admission standards at the School of Medicine and for the proper selection of students who upon graduation would continue the traditions of the University while representatives in the practice of medicine. Long interested in medical education Dean Wylie championed many projects. His most notable researches were into the historical background of medical education at the University of Maryland and in the development of and support for the Post Graduate Committee. As an administrator he was instrumental in creating a faculty organization, the Faculty Board; and was active in the development of a permanent Planning Committee, following the initial survey in reorganization of the School of Medicine in 1946.

As Dean Wylie retires he leaves the University in a sound physical state with a growing faculty and with well chosen successors both in his own office and in other professorships. His immediate plans do not call for anything elaborate. However, numerous gifts from students and faculty have all shown unmistakable evidence that the Dean intends to do some serious wood working, an intensification of a hobby he has long enjoyed. Dean Wylie will continue his active interest in the School of Medicine.

DEAN HONORED BY POST GRADUATE COMMITTEE

Dr. H. Boyd Wylie, Dean of the School of Medicine, was honored by the Post Graduate Committee at an informal dinner at the Sheraton-Belvedere Hotel in Baltimore on March 22, 1955. In paying proper tribute and recognition to Dr. Wylie's continued interest in post graduate medicine, Dr. Howard M. Bubert, Chairman and Director of the Post Graduate Committee outlined in some detail the course and development of post graduate medicine at the University of Maryland, giving Dean Wylie a large measure of credit for the support of the program.

DEAN WYLIE HONORED

Dr. H. Boyd Wylie, Dean of the School of Medicine University of Maryland was honored on his birthday with contributions he has given toward the advancement of the University Medical Library. May 3, 1955 was designated by the library as "Wylie Day". A display including photographs and articles concerning Dean Wylie was on view in the Library's reading room. An informal reception was held during the late afternoon.

MR. GEORGE BUCK RESIGNS AS HOSPITAL HEAD

Mr. George H. Buck, for a number of years Director of the University Hospital recently tendered his resignation effective June 30, 1955. Mr. Buck has been named Administrator of the Nassau Hospital in Mineola, New York.

DR. REIMANN LEAVES BULLETIN STAFF

Dr. Dexter L. Reimann, Associate Professor of Pathology and a member of the Bulletin Staff since the reorganization in 1950, has tendered his resignation to the Staff. Dr. Reimann has conducted in a very satisfactory and successful manner the quarterly Clinical Pathologic Conferences many of which have been reprinted widely in other medical journals. *The Bulletin* wishes to publicly acknowledge his valuable services in this regard.

CLASSIFIED EMPLOYEES FETE DEAN WYLIE AND MR. BUCK

The classified employees of the School of Medicine and the University Hospital held an informal reception for Dean H. Boyd Wylie and Mr. George H. Buck on Wednesday, May 18, 1955. As a token of esteem Mr. Buck was presented with a silver vase and Dr. Wylie received a gift certificate and working tools to augment his hobby shop. The committee on arrangements included Mr. J. Ed Smith and Miss Marian Loose of the Department of Pathology. Mrs. Margaret Kohler and Mr. L. Roy Barnes represented the University Hospital.

DEPARTMENT OF GYNECOLOGY

Dr. J. Mason Hundley, Jr., Professor of Gynecology, has been cited by the Maryland Division of the American Cancer Society for distinguished service in cancer control. At a recent meeting of the Society Dr. Hundley was presented with a formal certificate and medal.

Dr. Hundley recently attended the meeting of the American Gynecological Society in Quebec where he discussed a paper on "Anesthetic Hazards in Obstetrics" presented by Dr. Frank R. Lock. Later in the year Dr. Hundley plans to attend meetings of the American Association of Obstetricians and Gynecologists to discuss a paper "Operative Injuries of the Urinary Tract and their Treatment."

DEPARTMENT OF SURGERY PARTICIPATES IN NEW
SURGICAL PUBLICATION

Sixteen papers dealing principally with surgical problems all written by members of the Department of Surgery of the School of Medicine comprised the March 1955 issue of the American Surgeon Journal. This is the official publication of the Southwestern Surgical Congress.

DR. HARRY M. ROBINSON, JR. NAMED PROFESSOR OF
DERMATOLOGY*Succeeds Father in Chairmanship of Department and Professorship*

Dr. Harry M. Robinson, Jr., class of 1935, was recently named Professor of Dermatology at the School of Medicine and Chairman of the Department.

Following his preliminary education at the University of Maryland in College Park and his graduation from the School of Medicine in 1935, Dr. Robinson was a rotating intern at the University Hospital from 1935 to 1936 and Assistant Resi-

dent in Medicine during the following year. He then joined the Department of Dermatology serving as a Preceptee under his father Dr. Harry M. Robinson, Sr. who at that time was Professor of Dermatology. With the onset of World War II Dr. Robinson became Chief of the Dermatologic Division of the 142nd General Hospital and was stationed in the South Pacific Area and in India from 1942 through 1945. At this time he became interested in the study of malaria and skin diseases pertinent to tropical areas.

His activities in the School of Medicine have included appointments to the dispensary and attending staff of the University Hospital. He has served as Chief of the Dermatology Clinic since 1946. Dr. Robinson has been active on the teaching staff not only of the University of Maryland but has been visiting physician at the Johns Hopkins Hospital Department of Venereal Diseases. He is attending physician in dermatology for the Veterans Administration as well as consultant dermatologist. Since 1954 he has been Chief Dermatologist at the University Hospital enjoying similar appointments in a number of other local hospitals and hospitals throughout the State of Maryland.

Dr. Robinson's interest has centered not only in the practice of dermatology but in research as well, having contributed better than 50 papers to the derma-



Dr. Harry M. Robinson, Jr.

tologic literature, the majority dealing with the application of improved drug therapy in the dermatoses. He has been active in teaching medical students, post graduate courses and dermatologic nursing.

Dr. Robinson is a member of many learned societies including the Baltimore-Washington Dermatologic Society of which he was president in 1950. He is a member of the Dermatology Section of the Baltimore City Medical Society and has served as Delegate to the Medical and Chirurgical Faculty from the Baltimore City Medical Society during the years 1949 and 1950. He is a member of the American Medical Association, the Southern Medical Association, the American Academy of Dermatology and Syphilology, the American Venereal Disease Society, the American Dermatological Society and is a Diplomate of the American Board of Dermatology and Syphilology. Dr. Robinson is a frequent lecturer on dermatologic problems throughout the nation and State being actively concerned in all phases of post graduate continuation.

On several occasions he has traveled abroad for the purpose of giving lectures and demonstrations.

DR. SAMUEL P. BESSMAN JOINS PEDIATRIC STAFF

Dr. Samuel P. Bessman, an alumnus of Washington Medical School, St. Louis, has been recently appointed Associate Professor of Pediatrics in the School of



Dr. Samuel P. Bessman

Medicine. Dr. Bessman who had his preliminary education at the College of William and Mary, graduated from the Washington Medical School in 1944. He held an internship and assistant residency at the St. Louis Children's Hospital and in 1946 was appointed a Fellow there in pediatric research. From 1946 until 1948 he served with the United States Public Health Service as Assistant Surgeon and Director of Laboratories at the United States Marine Hospital in Norfolk, Virginia. In 1948 he was awarded a Fellowship with Dr. Heinrich Waelsch at the Neuropsychiatric Institute in New York. This was followed by another Fellowship under the supervision of Dr. Fritz Lipmann at the Massachusetts General Hospital where he served until 1953. In 1953 he became a member of the Pediatrics Department of the George Washington University Hospital. He was ultimately appointed Assistant Clinical Professor of Pediatrics and Director of Biochemical Research of the Research Foundation at Children's Hospital. Dr. Bessman is a Diplomate of the American Board of Pediatrics, a member of the American Society of Biological Chemists, the Society for Pediatric Research, the American Chemical Society, the American Society of Clinical Chemists and is a Fellow of the Academy of Pediatrics. His principal interest is in metabolic diseases of children.

Ruth Lee Briscoe

The Librarian Emeritus of the School of Medicine, Mrs. Ruth Lee Briscoe, died at her home in Baltimore on February 22, 1955. She was in her seventy-eighth year; for thirty-two of those years she had served as librarian of the School of Medicine.

Mrs. Briscoe was born in Baltimore, the daughter of a well-known librarian and art critic, John W. M. Lee. In 1901 she married Charles A. W. Briscoe, a member of the Baltimore Bar, and devoted the next few years to family life and social activities. With the death of her husband in 1912, she entered the profession which she was to follow with enthusiasm for the major years of her life.

Mrs. Briscoe's first position as librarian was at the Phipps Psychiatric Clinic, where she began her duties on the opening day of the clinic. In 1914, she was appointed librarian of the Library of the University of Maryland in Davidge Hall, thus becoming the third official librarian of the oldest medical college library in the United States.

The University of Maryland Library at that time, however, included the book collections of law, dentistry, pharmacy, and commerce, as well as medicine. Mrs. Briscoe administered the combined libraries until gradually, all except medicine, were withdrawn to go into the new buildings of their respective schools. Mrs. Briscoe remained as medical librarian and contributed much to the development of the medical collection.

In the earlier years, there was little to work with to develop a good library. Book funds were meagre or non-existent; equipment primitive; and library assistants few. Yet the librarian managed, despite limitations imposed, to keep the library growing, develop a collection of historic material which proves of increasing value, give service to library patrons, and make the medical library a place remembered by alumni far and near. When one tries to analyze how she accomplished all this, the answer seems to be her unique personality.

At the time of her retirement in 1946, there was ample evidence of her widespread influence and the affection which she inspired. Alumni not only in the United States, but from several foreign countries as well, sent enough letters of tribute for Mrs. Briscoe to make a bound volume which was presented at a reception in her honor. At the same time a check for five hundred dollars was given to her as a gift from faculty and alumni, and the title of "Medical Librarian Emeritus" conferred upon her by the Dean of the School of Medicine.

Although the library held a very high place in Mrs. Briscoe's affections—second only to her son and her grandson, she once remarked—her interests were by no means limited. She did geneologic research; editing and writing; collecting in several fields; fine needle work. She found time to enjoy social activities and membership in such organizations as the Daughters of the American Revolution and the Mayflower Society.

Several years after her retirement, the Ruth Lee Briscoe Library Fund was established by an alumnus who remembered Mrs. Briscoe's friendliness and sympathetic interest when he was a student. This fund receives yearly contributions from its anonymous founder, and from other alumni and friends of Mrs. Briscoe and of the library. These gifts are a continuing tribute to the warmth and responsiveness of Mrs. Briscoe's personality.

We shall miss her. She will not be forgotten. At the time of the reception honoring



Ruth Lee Briscoe

her retirement, Mrs. Briscoe ended a little speech by saying: "Farewell is a sad word and I cannot say it, for I shall still be available . . . I shall always be as I am now: your very own Mrs. Briscoe." We feel that somehow she will be.

Ida Marian Robinson

AOA-STUDENT RESEARCH SYMPOSIUM

Students Present Papers on Research at Meeting on May 11

Under the sponsorship of Alpha Omega Alpha, honorary medical society, students of the School of Medicine who have conducted creditable research projects during the year 1954-55 were given the opportunity of presenting their papers before an audience composed of members of the faculty and the student body. The following program was presented.

1. New Concepts in the Treatment of Peptic Ulcer. Irvin P. Pollack
(This paper was the winner of the 1953 Schering Award)
2. Report of Duodenal Drainages in Normal Children and Fibrocystic Disease
Robert G. Shirey
3. The Incidence of Primary Brain Tumor in C57 Black Mice Treated with Intracerebral Pellets of 20 Methylcholanthrene and Subjected to Mechanical Trauma
George Gifford
4. Biochemical Changes in the Central Nervous System during Excitation and Depression. Jack Mendelson

LUTHERAN HOSPITAL RESIDENCY APPROVED

A residency training in pathologic anatomy has been approved by the American Medical Association for 1 year. This residency, developed on the basis of an affiliated program with the School of Medicine, has been in the process of development for several years. The residency is currently held by Dr. Ursula Slager.

DR. DOUGLASS RETIRES

Dr. Louis H. Douglass for many years Professor of Obstetrics at the School of Medicine formally retired on July 1, 1955. The April, 1955 number of the Bulletin (Vol. 40, # 2) was dedicated to Dr. Douglass in addition to a formal testimonial dinner presented in his honor by the Dougtricians (an honorary society of former residents of Dr. Douglass) on April 28, 1955.

DEPARTMENT OF ANESTHESIOLOGY

Dr. Paul R. Hackett, Associate Professor of Anesthesiology, presented a paper at the Southern Society of Anesthesiologists, held on April 14, at Memphis, Tennessee. Dr. Hackett spoke on "Anesthesia for Bilateral Thoraco-Lumbar Sympathectomy and Adrenalectomy in Malignant Hypertension".

STUDENT WINS MEDICAL SERVICE PRIZE

Mr. Wilbur C. Pickett, Jr., a member of the junior class at the School of Medicine was the winner of the Student-A.M.A.-Blue Shield Essay Contest for the State of

Maryland. Mr. Pickett's winning essay was entitled "A Medical Student Looks at Blue Shield".

THREE STUDENTS MENTIONED IN SCHERING AWARD FOR 1954

Three members of the School of Medicine, Mr. Ronald R. Berger, Miss Virginia E. Young and Mr. Harold I. Rodman were awarded certificates of honorable mention for original manuscripts in the Schering Award competition for 1954. This competition is designed to encourage medical students to explore current and recent research by the medium of original investigation.

DR. ROBINSON TO LECTURE IN GERMANY

Dr. Harry M. Robinson, Jr., Professor of Dermatology, has been invited to address the All-German Congress on Therapy to be held on August 31, 1955 at Karlsruhe. Dr. Robinson will be the guest of the Pfizer International of Germany and will address the Congress on the subject of Antibiotics and Steroids in the Therapy of the Dermatoses.

DEPARTMENT OF ANATOMY

At the recent Annual Meeting of the American Association of Anatomists held in Philadelphia, members of the Department of Anatomy of the School of Medicine presented the following papers included in the program.

1. Porphyrins to Delineate Normal and Abnormal Anatomical Structures, presented by Drs. Figge, Mack, Peck and Holbrook.
2. A Demonstration of the Continuous Alveolar Epithelium in the Lungs of Mice, presented by Dr. Vernon E. Krahle.
3. Passage of Injected P32 from the Amniotic Fluid of the Fetal Mouse, presented by Dr. Robert E. McCafferty.

MEET THE EMERITI

DR. CARL L. DAVIS

Dr. Carl L. Davis was born in Vermontville, Michigan, a small town not far from Ann Arbor. His family moved to Washington, D. C. when he was little more than an infant, so that he considers himself a native of the District of Columbia, having spent more than forty years in our nation's capitol.

His elementary and secondary education were gained in the public schools. After graduation from Central High School, in the "gay nineties," the young man began his premedical and medical education at Georgetown University. He transferred to George Washington University in his senior year and also had the opportunity of an externship at Garfield Hospital during this last year in medical school.

Dr. Davis' father was a civil engineer much of whose time was spent on construction projects in Central and South America. In his college days young Carl accompanied his father on several of these assignments. After graduation, in 1901, Dr. Davis spent a year of internship at Garfield Hospital. He was then associated



Dr. Carl L. Davis

with Dr. Frank Hagner, a G. U. specialist in Washington. The young doctor practiced this specialty for about four years before returning to his Alma Mater as a part-time demonstrator in Anatomy. His interest in this basic medical subject increased and, after two years, he was made a full Professor of Anatomy at George Washington University.

Up to this time the rising young physician had been a bachelor but finally, in 1914, he succumbed to the wiles of a New England girl, from Westmoreland, Vermont, who was teaching in Washington.

Dr. Davis served as Head of the Department of Anatomy at George Washington University for seven years and was then sought by the University of Maryland. He started his tenure of office at the Medical School the year it was established as a State University. He was the first full-time professor and head of a department to be employed from the outside. He soon became a part of the University and endeared himself to students and professional associates alike. Between 1920 and 1931 he built up "Anatomy" from a one-man-department to one requiring the services of six men. In 1926 he was instrumental in bringing Dr. Edward Ulenhuth to the University. Dr. Ulenhuth later headed "Gross Anatomy" when the enlarging department was subdivided in 1931 into Histology, Embryology and Neuro-anatomy. The latter sections remained under the jurisdiction of Dr. Davis.

Another of his important contributions to the welfare of the University was the planning of the physical facilities of the Bressler Building, which is still serving the needs of the basic science departments.

The Professor's dominant scientific interest has always been embryology. He had a long established connection with the Carnegie Foundation of Embryology at Hopkins and has continued this interest as an avocation since retirement. About two years ago he discovered that Latex rubber was an excellent material for constructing his models of embryos. (It is interesting to learn that he tested its indestructibility by allowing his grandchildren to play with the models.) The embryologist now finds much pleasure and relaxation in his basement laboratory at 3517 North Calvert Street. However, he still has space in the Bressler Building, which he occasionally visits.

Dr. Davis' three children are married, and living in widely scattered parts of the United States. The family proudly boasts nine grandchildren.

Our beloved emeritus professor and Mrs. Davis maintain a summer home in Westmoreland, Vermont where they look forward to the visits of their children and grandchildren.

Best wishes for continued enjoyment of your well earned retirement, Dr. Davis.

MEDICAL LIBRARY NOTES

LIST OF DONORS TO THE LIBRARY COLLECTION

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Mrs. Ira E. Bayer, Jr.	Dr. Frank W. Hachtel
Mrs. Eleanor Beissinger	Dr. Samuel M. Jacobson
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Dr. A. H. Finkelstein	Dr. John I. White
Mr. William M. Gould	Dr. Robert B. Wright

Dr. H. Boyd Wylie

Dr. A. Frank Thompson, Jr. and Dr. Arthur M. Kraut contributed generous checks to the Ruth Lee Briscoe Library Fund, which is used exclusively for the purchase of library materials.

LIBRARY BUILDING PLANS

The 1955 legislature appropriated funds for the planning of a new library of the medical sciences and for the purchase of additional property which will be needed for such a building. Preliminary plans have already been drawn up and will be reported in detail in the next issue of the Bulletin of the School of Medicine.

MERCY HOSPITAL SECTION

As part of Mercy's Postgraduate Training Program, DR. LEONARD H. FLAX, Junior Assistant Resident In Surgery, attended the International College of Surgeons meeting at the Statler Hotel in Washington, D. C., on February 11th and 12th. Dr. Flax attended symposiums on peripheral vascular disease, acute gall bladder diseases fractures and their complications, and biliary tract surgery.

DR. ELIZABETH Y. PAHK, Chief of Anesthesiology, took a course in "Recent Advances in the Pharmacologic Aspects of Anesthesia" at the University of Pennsylvania from March 7th to March 9th.

DR. RICHARD FRAVEL, Senior Assistant Resident in Medicine from July to October, 1954, is now serving with the Air Force at Lowry A.F.B., Colorado.

DR. FRANK K. MORRIS, Chief of Gynecology, was elected to the Board of Medical Examiners at the annual meeting of the Medical and Chirurgical Faculty of Maryland in April, 1955.

DRS. EASTLAND, MARRIOTT, MULLER, AND SOL SMITH, all from Mercy, attended the Annual Meeting of the American College of Physicians, held in Philadelphia, April 25th to April 29th.

MISS MARY ELIZABETH JOHNSON, Chemist at Mercy Hospital attended a Postgraduate Course given under the auspices of the Colorado University Medical School and Colorado Society of Medical Technologists.

DR. WALTER D. WISE resigned as Chief of Staff at the Meeting of the Board of Governors, Tuesday night, May 10th, to become effective June 1st. Dr. Daniel J. Pessagno will succeed Dr. Wise as Chief of Staff.

PHARMACOLOGIC NOTE

A bulletin issued by Parke, Davis and Company recently revealed that 90 per cent of today's prescriptions written by the practicing physician are for medicines which did not even exist 15 years ago.

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* July 1, 1954 to June 30, 1955

PRESIDENT'S LETTER

"The old order changeth, yielding place to new".

These words of Tennyson came to mind on hearing of the retirement of Dr. H. Boyd Wylie from the Deanship of the Medical School. One unconsciously associates certain men with institutions, and to me Dr. Wylie and the University of Maryland Medical School are almost synonymous. During my time I cannot remember Dr. Wylie as not being officially connected with teaching at the School of Medicine.

As a second year student he was my Professor in Biochemistry. In these early days he used his knowledge of my brother's studious habits to whip me into line when I tended to relax my efforts in chemistry. Brother Bill and Dr. Wylie were medical school classmates. His remark "Bill was a *good* student" never failed to get results.

As a teacher he gave you the facts in a systematic and incisive manner which gave the impression that you better get them. However, this exterior manner could be penetrated and a student could always be sure of kindly assistance and encouragement with his problems.

His interest in and love for medical students has been manifest throughout his adult life and I cannot visualize Dr. Wylie in a role other than teaching, advising and commingling with medical students. Even when he moved into Assistant Deanship and later the Dean's chair he carried with him the concern and affection for the student which characterized his teaching days.

When in later years I had occasion to contact him about intern problems or Alumni Association matters he was always the friendly teacher, willing to help and advise, but with the student's welfare his first consideration.

During his term as Dean, alterations were made in the pre-medical curriculum and changes advanced in admission requirements, but unless these moves were for the advancement of the student, Dr. Wylie was most vehement in his criticism.

The University can be proud of Dr. Wylie's accomplishments as he is proud of his association with the University. No one is more entitled to relief from his labors, but it will be difficult to envision the University of Maryland Medical School without Dr. Wylie.

I wish to extend to him my personal thanks for his many favors and in the interest of the Alumni Association ask that he still be available for suggestions and advice when we need the benefit of his judgment and wisdom.

FRANK J. GERAGHTY, M.D.
PRESIDENT.

AN OPEN LETTER TO ALUMNI

Fellow Alumnus:

This is an appeal and is addressed directly to you, a graduate of our School of Medicine.

This is your Alumni Association as it is also mine. It so happens I am in a better position to know what is going on inside the Association and consequently more able to evaluate its strength and its potential. Believe me when I say we—the Alumni Association—are in a position of advantage. An effort has been successful in getting our house in order. We have brought the publication of the Bulletin up to date, have been heard with effect since the aspersions cast in the Maryland gubernatorial campaign of 1954 were openly directed at our School of Medicine, and have established in the public mind that we, the Medical Alumni Association, are a definite entity. We stand for something and that something is simply this: Confidence in our Faculty to continue a system of instruction which produces doctors qualified to go out and practice their profession efficiently and with credit and distinction.

But there is a limit to endurance and we as an Association must not expect devotion to a tradition to go on ad infinitum. It is well known that our teaching faculty has literally been working "for the joy of working". By comparison with Medical Schools of a similar size our teaching group from a standpoint of pay is near the bottom of the barrel. Let's take renewed interest in our Alma Mater, pay tribute to whom tribute is due, encourage our alumni resident in Maryland to get after our Board of Regents and our Legislature and insist on adequate appropriations to support our school to the extent its carefully prepared budget suggests.

But first of all, regardless of where you live, you should become a supporting spoke in the wheel that is carrying the burden. In union there is strength and there is always safety in numbers. Think it over and I believe you will gladly join the effort to keep Maryland where it has always been, right up among the top medical schools in the country.

Let us all join in support of a movement to develop the strength needed to consolidate our gains, improve our position, strengthen our voice in plotting policy and enhance the value of our diplomas.

Your reaction to this appeal will be awaited—not with anxiety—but with confidence.

Sincerely yours,
WILLIAM H. TRIPLETT, M.D.
DIRECTOR

A BRIEF HISTORY OF THE FOUNDERS OF THE UNIVERSITY OF MARYLAND

At the close of the Revolutionary War Baltimore was a thriving town of 8000 population.

In 1796 Dr. John Beale Davidge settled here to begin the practice of medicine. A year later Dr. Nathaniel Potter came to Baltimore for the same purpose. From the time of their arrival Dr. Davidge entertained the idea of establishing a medical school and discussed this subject often with Dr. Potter. Unfortunately, they could find no others who were "willing to embark in an untried experiment so inauspicious and problematical." Nevertheless, in 1802, Dr. Davidge advertised in the newspaper a "private course of lectures" on anatomy, surgery, midwifery and physiology. He established a dissecting room in a house on the Southeast Corner of Saratoga and Liberty Streets. However, the citizens of Baltimore were not ready to accept such an approach to the acquisition of knowledge of the human body, considering it to be both fearful and horrible. Blind ignorance and superstition had prejudiced these good citizens against information that would be to their ultimate good. A mob battered down the door and destroyed Dr. Davidge's laboratory. About this time the Medical and Chirurgical Faculty of Maryland which had received its charter from the state in 1799, began to agitate for the establishment of a medical school.

The year 1807 is memorable as the date of the founding of the proposed institution because it was in this year that Dr. Davidge, Dr. James Cocke of Virginia and Dr. John Shaw of Annapolis united to establish a course of medical instruction. Lectures began in November of 1807 and Dr. Shaw lost no time in drawing up a charter which was passed by the Maryland State Legislature on December 7 as the Medical College Bill.

The *Federal Gazette* of December 30, 1807 carried the following account of this newly formed school: "At a meeting of the Regents of the College of Medicine of Maryland, held pursuant to an act of the General Assembly for founding a medical college in the city or precincts of Baltimore, passed December 18th, 1807, George Brown, M.D., was unanimously elected President, Solomon Birkhead, M.D., was unanimously elected Treasurer, and James Cocke, M.D., Secretary. After these elections were made the Board entered into the following resolution:

"Resolved, That the appointments by the General Assembly of George Brown, M.D., to the professorship of the Practice and Theory of Medicine; of John B. Davidge, M.D., and of James Cocke, M.D., to the joint professorship of Anatomy, Surgery and Physiology; of John Shaw, M.D., to the professorship of Chemistry; of Thomas E. Bond, M.D., to the professorship of Materia Medica; and of William Donaldson, M.D., to the professorship of the Institutes of Medicine, be and are hereby confirmed.

"Dr. Brown having resigned, Nathaniel Potter, M.D., was elected to the professorship of the Practice and Theory of Medicine.

"The Board of Regents being adjourned, John B. Davidge, M.D., was elected Dean by the Medical Faculty of the College of Medicine of Maryland. James Cocke, M.D., Secretary.

"The Professors of Anatomy and Chemistry have commenced their lectures."

The president and professors of the Medical College, with the approval and advice of the Board of Regents, presented to the legislature An Act for Founding a University in the City or Precincts of Baltimore by the Name of the "University of Maryland." This was passed on December 29, 1812, thus giving the school its official name.

As time progressed from this early date, some of the original professors resigned and others took over their duties and additional appointments were made. However, the two outstanding men who were so instrumental in the establishment and continuation of the original nucleus of the now great University of Maryland were Dr. John B. Davidge, often spoken of as the Father of the University, and Dr. Nathaniel Potter. From its conception the University passed through many trying times. During its earliest and lowest ebbs when its foremost professors resigned Dr. Nathaniel Potter held steadfast and kept the institution from complete collapse.

Cordell gives a brief biography of these two men as follows:

John Beale Davidge was a native of Annapolis, where he was born in 1768. His father was an ex-captain in the British army and his mother was Miss Honor Howard, of Anne Arundel County, a relative of Col. John Eager Howard; he was their only child. At an early age John Beale lost his father and being in straitened circumstances, his mother wished to apprentice him to a cabinetmaker. But he resolved to have an education, and obtaining aid from friends and fortunately coming into possession of some slaves through the death of a relative, he entered St. John's College at Annapolis and received from it the degree of A.M. in 1789. He began the study of medicine with Drs. James and William Murray, of Annapolis, continued it for a short time at Philadelphia and then spent several years at Edinburgh, where he devoted himself especially to the study of anatomy, for which he always evinced a strong liking. On the voyage to Scotland, which was made in a sailing vessel, he was accompanied by Drs. Hosack, Brockenborough and Troup, all of whom afterwards became eminent practitioners in America. It is related that they encountered very rough weather and were compelled to work at the pumps to keep the vessel from sinking. From motives of economy he took his degree (M.D.) at Glasgow University and not at Edinburgh. The date of his graduation was April 22, 1793. About this time he married Miss William Stuart, of the Firth of Solway, a lady of high social standing, several years his senior, who not only had a masculine name but a masculine demeanor. He practiced first for a short time in Birmingham, England, then returned to Maryland, and, after a brief residence in Frederick and Harford counties, selected Baltimore for a permanent home in August, 1796. In 1797 a severe epidemic of yellow fever raged in the city and there was a public discussion of the disease in the newspapers by the physicians. Dr. Davidge bore a prominent part in this discussion, and early in the following year republished his views in a volume which, though faulty in style, was favorably noticed in the journals and was freely quoted from in later works upon the subject. In 1801 the Baltimore General Dispensary was founded and he was one of its first attending physicians. In 1802 he began to give private courses of lectures to medical students, and these courses were continued annually until 1807, when being joined by Drs. Cocke and Shaw, his school became the "College of Medicine of Maryland." In 1805 he delivered the first annual oration before the Medical and Chirurgical Faculty of Maryland, in

accordance with a regulation adopted in 1803 creating the office of "orator." From 1807 to 1812 he lectured on Surgery and Institutes; from 1813 to his death in 1829 he held the chairs of Anatomy and Surgery, one or both. He also lectured during the earlier years on Obstetrics. He died from a malignant tumor of the face and his remains were interred in Loudon Park Cemetery.

Nathaniel Potter, the son of Dr. Zabdiel Potter, was born at Easton, Talbot County, (Eastern Shore of) Md., in 1770. His ancestors were from Rhode Island. Nathaniel was educated at a college in New Jersey and obtained his medical degree at the University of Pennsylvania in 1796 and began practice in Baltimore the next year. He was the intimate friend and for several years the favorite pupil of the great physician, Benjamin Rush. From 1807 to 1843 Dr. Potter was Professor of Theory and Practice of Medicine in the University of Maryland, and the second Dean of the School of Medicine.

In many respects he was a remarkable man, and it is a strange freak of fortune that no memoir of him has ever appeared. Even the exact date of his birth has passed into oblivion. When we recall his learning, his courage, his skill, his eminent reputation as a teacher, and his steadfastness in adversity, we can give him no secondary place in the history of the medical profession of Baltimore and in the annals of the institution he helped to found. His fame was at least national and his opinions were everywhere received with deference. His students looked upon him as an infallible authority. Beliefs with him were rules of faith and he acted upon his convictions without wavering or misgiving. His earnestness was vital, his faith in the resources of medicine was implicit. He shared in that wonderful skill in diagnosis which, without other aid than eye and touch enabled forefathers of medicine to reach almost unerring conclusions, and which fill their descendants with astonishment. His prognoses were prophetic. Dr. Potter displayed his courage by making himself the subject of experiments with the secretions from yellow fever patients, thus establishing the non-contagious character of that disease. His steadfastness was shown by his unwavering attachment to the University throughout his long connection with it. He loved it with the most passionate devotion. Threats, ridicule, indifference, adversity, poverty—nothing could shake his allegiance. His latter days were clouded by adverse pecuniary circumstances which embittered his existence. He became irritable and peevish and disposed to brood over his unrequited labors. Although subject to gouty attacks, his death was sudden, occurring during a fit of coughing, January 2, 1843. The charity of his friends had to be invoked to secure for him a final resting place in Greenmount Cemetery, where, unmarked by any stone or device, his remains still lie.

Upon recent visits to the graves of these two illustrious founders of the University of Maryland it was discovered that the inscription on the grave of Dr. Davidge has become so completely obliterated that it is no longer legible.

From the cemetery records it was learned that his gravestone bore the following inscription:

John Beale Davidge, A.M., M.D.
Professor of Anatomy and Surgery
University of Maryland
Died August 27, 1829
In the Sixty First Year of his Life

Since Dr. Potter was buried through the charity of his friends at a cost of about seventeen dollars, his grave bears no marker of any type.

At a meeting of the Advisory Board of the Faculty of the School of Medicine of the University of Maryland, on April 22, 1954, attention was called to the now unmarked graves of these two founders of the University. It was proposed that an attempt be made to raise funds from the faculty, alumni, and friends of the University to erect suitable bronze markers over the graves commemorating these men and their relation to the institution they founded. It was also proposed that suitable sculptured bronze busts be erected, either in Chemical Hall or the Faculty Board Room in the Medical School building where they devoted so much of their time in teaching and directing the early affairs of the University. Further, that this become the nucleus of a special fund to be established solely for memorializing selected former faculty and alumni of the University, who have been outstanding contributors to the good of mankind and the world in general. To this end it was moved that Dean H. Boyd Wylie appoint a committee to develop suggestions for presentation to the faculty regarding suitable memorials. This report and request for funds is the outcome of this faculty action.

When one considers that these two men, Drs. Davidge and Potter, established the institution that gives many of us employment or a means of livelihood we should give generously to mark their unidentified graves and to pay them suitable tributes which have been delayed a hundred and twenty-five years. Therefore, may we ask you to fill out the coupon below and mail a check or contribution of any amount, to be used solely for the memorializing of the illustrious past faculty members and alumni of the University of Maryland. Who knows but that such an honor may be eventually paid to you!

WILLIAM H. TRIPLETT, M.D.
CARL D. CLARKE
COMMITTEE MEMBERS

COUPON

To the Honor Committee of the
University of Maryland, School of Medicine

Gentlemen:

Herewith enclosed is \$_____ as my contribution to the fund to honor past faculty and alumni members of the University of Maryland, who have made outstanding contributions to the University of Maryland, to the good of mankind and the world in general.

Signed:

Deductible from Income Tax

Please draw checks payable to: University of Maryland, School of Medicine

DR. NOVAK AWARDED ROYAL SOCIETY MEMBERSHIP

An Honorary Fellowship in the Royal Society of Medicine has recently been awarded to Dr. Emil Novak, B.M.C. 1904 and Assistant Professor Emeritus of Gynecology at the Johns Hopkins University School of Medicine. This Honor Society is limited to a membership of 100 of whom not more than 50 may be British.

POST GRADUATE NOTE

The usual Post Graduate Committee Section of the Bulletin will be omitted for the month of July, but will be resumed with the October, 1955 number, according to Dr. Howard M. Bubert, Chairman and Director of the Post Graduate Committee.

ALUMNUS HEADS DIVISION OF NATIONAL INSTITUTE

Dr. Leonard T. Kurland, class of 1945, has recently been named Chief Epidemiology Branch of the National Institute of Neurological Diseases and Blindness in Bethesda, Maryland. Dr. Kurland was recently a guest lecturer at the School of Medicine speaking on the subject "The Etiological Significance of Multiple Sclerosis and Amyotrophic Lateral Sclerosis in North America and in the Micronesian Islands".

ITEMS

Bowers Named Wisconsin Dean

Dr. John Z. Bowers of the class of 1938, and until recently Dean of the School of Medicine of the University of Utah has been nominated Dean of the School of Medicine of the University of Wisconsin at Madison and will assume his new duties as of July 1, 1955.

Dr. William R. Post, class of 1947, has announced the opening of his office at 2120 East Main Street, Springfield, Oregon, for the practice of obstetrics and gynecology. Dr. Post was formerly a resident in obstetrics and gynecology at the Lutheran Hospital of Maryland.

Dr. Lois I. Platt, class of 1946, who is currently Director of the Psychology Laboratory of the George Washington Cancer Clinic in Washington, D.C. is the recent author of a booklet entitled "Guide for Use of Clinical Psychology in Diagnosis".

Dr. William B. Soltz, class of 1934, was recently certified as a Diplomate of the American Board of Internal Medicine. Dr. Soltz is currently in practice at 1171 Elder Avenue, New York City.

Dr. Herbert Berger, class of 1932, who is a Past President of the Richmond County Medical Society, is President Elect of the First District of the Medical Society in the State of New York. Dr. Berger has also been recently elected President of the Medical Staff of the Richmond Memorial Hospital, Staten Island, New York. He is engaged in the practice of Internal Medicine at 7440 Amboy Road, Tottenville, Staten Island, New York.

Dr. Jacob H. Conn, class of 1929, has been elected a Fellow of the Society for Clinical and Experimental Hypnosis. Dr. Conn is also a member of the Editorial Boards of the Journal of Clinical and Experimental Hypnosis and the Archives of Criminal Psychodynamics.

Dr. Jerome Pleet, class of 1949, has announced his return from military service and has opened his office for the practice of obstetrics and gynecology at 301 East Chase Street in Baltimore.

Dr. William G. Thuss, Jr., class of 1948, is currently enrolled in a graduate course in Industrial Medicine at the University of Cincinnati. Dr. Thuss will complete his studies in 1956.

Dr. Stanley E. Schwartz, class of 1941, has recently been certified by the American Board of Surgery. Dr. Schwartz practices surgery at 420 Lincoln Road, Miami Beach, Florida.

Dr. Richard J. Brown, class of 1944, is currently serving as a resident in anesthesiology at the Grace-New Haven Hospital, New Haven, Connecticut. Dr. Brown visited the School of Medicine in December, 1954.

DR. CARLYLE YATES, B.M.C. 1900, writes that he is enjoying rest and retirement and is in perfect health at the age of 76. Dr. Yates was formerly associated with the biologic department of the House of Squibb.

DR. JESSE N. BORDEN, class of 1940, has announced the removal of his office to 819 Park Avenue, Baltimore 1, Maryland.

DR. W. RAYMOND MCKENZIE, class of 1915, P & S, was named President of the Southern Medical Association for the year 1955-56.

DR. L. GUY CHELTON, class of 1950, has recently been appointed to the Faculty of the School of Medicine of Emory University in Georgia.

DR. FREDERICK A. GARLOCK, class of 1953, has advised the Alumni Office that he has established a practice at 106 North Twelfth Street, Edinburg, Texas.

CORRESPONDENCE

The following was recently received from Dr. Joseph M. George, Jr., class of 1938: " . . . I meet a lot of Maryland men traveling about the country. Here in Las Vegas (Dr. George practices in Las Vegas, Nevada) we have Dr. James Swank who graduated in 1927, Dr. Grant Lund from 1936, Dr. John Carroll Russell from 1935, Dr. John Beatty from 1947, not to mention myself. That is a pretty good representation so far away out of about 55 doctors here in our County Medical Society. Dr. Beatty is now on a year's fellowship with the American Heart Association—doing heart research at the University of Southern California. I see Johnny Bowers every now and then. Took a course up there at the University of Utah Medical School in March. Very good course. John is doing a fine job there as Dean.

Expect to be in Baltimore again in late August or early September in 1955 . . . "

Joseph M. George, Jr., M.D.

LUTHERAN HOSPITAL BEGINS PRELIMINARY PLANS FOR EXPANSION

Following a survey to determine the adequacy of existing conditions and acting on recommendations by Ketchum, Incorporated, the staff and Board of Directors have begun preliminary plans for the development of an expansion program. This plan is designed to increase the ancillary facilities and bed capacity of the hospital. At the present time, the services of an architect are being solicited as preliminary to the actual commencement of a coordinated program.

PATHOLOGY PROFESSOR FROM INDIA RESIDENT AT SCHOOL OF MEDICINE

Dr. Krishna M. Wahal, a member of the Department of Pathology of the University of Lucknow in India is currently associated with the Division of Neuropathology, Department of Pathology in the School of Medicine. Dr. Wahal is pursuing post graduate studies and research in neuropathology.

DEPARTMENT OF DERMATOLOGY ORGANIZES MYCOLOGY LABORATORY

Under the direction of Dr. Harry M. Robinson, Jr. who now heads the Division of Dermatology, a new mycology laboratory has been recently opened. The major purpose of the dermato-mycologic program will be for research and particularly to determine the value of certain treatments in fungus diseases of the skin. Dr. Stanley N. Yaffe has been assigned to the project as research assistant and Miss Marjorie Huck will assist Dr. Yaffe in his work.



THE MEDICAL SCHOOL AND HOSPITAL PLATES

Plates of the School of Medicine; the old Hospital and the new Hospital; University of Maryland, are available. These white plates are 10 inches in diameter with the design printed in black.

The price is \$2.50 each, plus fifty cents insurance and postage in the U. S. A. Insurance and postage for foreign mail is one dollar. Please send your order, with check, stating the plates desired to Mrs. Bessie M. Arnurius, Box 123, University Hospital, Baltimore 1, Maryland.

Checks should be made payable to the NURSES' ALUMNAE ASSOCIATION OF THE UNIVERSITY OF MARYLAND.

YOUR MEDICAL HERITAGE*

THEODORE E. WOODWARD, M.D.

It is a pleasure for Mrs. Woodward and me to share in celebrating this happy occasion with the class of 1954. Our wish is that you enjoy a successful career in the various fields of medicine which you select.

The text for my remarks this evening is analogous in some respects to the ingredients of a good post prandial cigar which not infrequently follows such a delightful meal. The cigar is composed of a filler and a wrapper both of which are essential for the full enjoyment. The filler or foundation of your medical career is now a matter of almost complete accomplishment being comprised of your family background, your pre-medical education and now the fulfillment of your formal training. Rest assured that you are as basically well trained in the science of medicine as the many friendly competitors whom you will confront from other schools during your hospital service throughout the land. Oh, perhaps some may surpass you in purely scientific refinements such as how many International Units of this or that will enhance the daily output of oxysteroids, but fundamentally you are prepared to assume the responsibility of caring for patients. Regardless of the academic record of your class in relation to other classes, I still would hold to this conviction. And why?—You are the same type of Physician-trainee that has traveled along the seemingly endless four year road which has now led to medical maturity. You are no different with respect to age, academic attainment, character, esprit de corps and ultimate aims in life.

At this focal point, we your teachers and you are fundamentally no different, a little older—yes, some a little grayer, some a little less hirsute, but fundamentally the same. It is worth reaffirming that the ideals and character of your preceptors are the same as those which have assisted some 5000 men and women to become physicians under the School's guidance in the past 54 years. They are the same tutors who have ingrained the concept that basic clinical medicine and discipline are the necessary essentials for the background or filler. Instructors are of much more vital importance than fine spacious buildings, highly refined and technical scientific equipment and the like. The filler of your education is and always must be good basic groundwork in the clinical sciences, patients for a text and clinical instructors as leaders. Not spoon feeding; Osler deplored the word. A physician must be taught to think, but taught to think for himself, on his feet. Without further elaboration on matters which I do not consider flights of fancy, let us turn to the wrapper of this "Corona Corona", the dessert of the delicious dinner, the birdie of an average golf round.

The wrapper is, I consider, the confidence which is not yet fully yours, a something which is a part of some of you and will reach all of you in due time. The medical school cannot give this. It comes from within, from experience, and you will succeed or fail in obtaining it depending upon your desire to become the whole physician. This objective cannot be accomplished by accumulating scientific facts

* An address on the occasion of the senior dinner-dance of the Class of 1954.

alone since it is concerned with understanding the Art of medicine. It is concerned with broadening you knowledge and interest, scientific, social and civic, developing an understanding and common interest in your fellow man not in terms of grains of aspirin or units of penicillin but with human factors. The physician in times past and in times present is called upon to take a prominent and responsible place in the community, large and small. We predict that the class of 1954 possesses this potential as did your predecessors. Does "it ever snow like when I was a little boy". Of course it does. Indeed, you are all better versed in matters scientific with more than a touch of the modern.

Let me briefly remind you of your forbearers who have received the same filler as you,—physicians who later added the wrapper here and there from the school of experience and application throughout the world, men who reflect light on Lombard and Greene.

Dr. Fred Rankin, recently deceased, former president of the A.M.A., outstanding surgeon and chief surgical consultant during the recent War; Dr. Samuel T. Darling, eminent clinician, bacteriologist and discoverer of histoplasmosis as a clinical entity; Major General Norman Kirk, Surgeon General of USA during World War II; Dr. George Bennett, one of the country's leading orthopedic surgeons; Dr. Stanley Bradley, outstanding renal physiologist; Dr. John Z. Bowers, Dean of Utah School of Medicine and authority in Atomic Energy; Dr. Arthur Shipley, Professor Emeritus of Surgery and foremost teacher of this specialty that Baltimore ever had; Dr. W. Wayne Babcock, Emeritus Professor of Surgery at Temple University, a pioneer American surgeon and developer of spinal anesthesia, author of a standard textbook, recipient of the American Medical Association gold medal; the late Dr. Arnold D. Tuttle, pioneer flight surgeon and former Director of United Airlines; Dr. Louis A. Buic, eminent American proctologist, author and formerly Chief of the Section on Proctology at the Mayo Clinic; Dr. Emil Novak, eminent gynecologist and author, recipient of the Alumni Certificate of Honor and Gold Key in 1953; Dr. Maurice C. Pincoffs, your professor of medicine, not a Maryland graduate but so much Maryland that the old abbreviation of our early school P & S or Physicians and Surgeons is said by some to mean Pincoffs and Shipley. Dr. Pincoffs is one of the few remaining Oslerian physicians in our country. He is a former President of the American College of Physicians.

One day many of you now about to receive your diploma will add the wrapper and some will reach higher goals. Yes, the filler is acceptable and you are well endowed with it. The problem of adding the wrapper is yours. We who are and will always remain interested in you do not doubt for one minute your ability to achieve it.

OBITUARIES

Anderson, Francis G., Roanoke, Va.; P & S, class of 1889; aged 91; killed September 12, 1954 in an automobile accident.

Armstrong, Howard, Linville, Va.; class of 1899; aged 78; died, December 13, 1954.

Basil, George Chester, Annapolis, Md.; class of 1927; aged 52; died, December 5, 1954, of coronary thrombosis.

Brown, George Woodford, Williamsburg, Va.; P & S, class of 1893; aged 85; served during World War I; died, October 8, 1954, of arteriosclerotic heart disease.

Carr, George Hopkins, Portsmouth, Va.; class of 1896; aged 79; died, October 10, 1954, of cerebral hemorrhage and arteriosclerosis.

Champe, Ira P., Charleston, W. Va.; P & S, class of 1892; aged 88; died, November 21, 1954, of myocardial insufficiency and arteriosclerosis.

Clinton, Rowland Smith, Gastonia, N. C.; class of 1914; aged 63; served during World War I; died, January 21, 1955, of subacute bacterial endocarditis and arteriosclerosis.

Curtin, William Edward, Plymouth, Mass.; B.M.C., class of 1913; aged 66; died, February 3, 1955.

Gerber, Jacob Wolfe, Bridgeport, Conn.; class of 1904; aged 74; died, February 26, 1955, of heart disease.

Glatzau, Lewis William, Daytona Beach, Fla.; class of 1916; aged 65; served during World War I; died, December 14, 1954, of fibrosarcoma of the lungs.

Grabill, John Stanley, Mt. Airy, Md.; class of 1921; aged 57; died, January 30, 1955.

Granger, Ernest Elmer, Ottawa, Ill.; B.M.C., class of 1903; aged 77; died, December 27, 1954, of cancer.

Grove, John Bean, Petersburg, W. Va.; P & S, class of 1909; aged 67; died, October 9, 1954, of arteriosclerosis and arterial hypertension.

Gwin, Robert Campbell, Brookline, Mass.; B.M.C., class of 1895; aged 85; died, March 14, 1955, of a heart attack.

Hagenow, LeRoy K., East Greenwich, R. I.; B.M.C., class of 1898; aged 80; died, December 27, 1954, of carcinoma of the bladder.

Harrell, Leon Jackson, Goldsboro, N. C., class of 1930; served during World War II; aged 53; died, January 26, 1955, of cerebral hemorrhage.

Hasler, Walter Thalman, Provo, Utah; P & S, class of 1905; aged 79; died, January 27, 1955, of injuries received in a fall.

Hudson, Benjamin B., Columbus, Ga.; P & S, class of 1897; aged 82; died, January 16, 1955, of carcinoma of the pancreas.

James, Oliver Victor, Milford, Del.; class of 1906; aged 75; died, February 22, 1955, of ruptured dissecting aortic aneurysm with pneumothorax.

Little, Alonzo Worthington, Jersey City, N. J.; P & S, class of 1912; served during World War I; aged 69; died, November 14, 1954, of cerebral hemorrhage.

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of
Bulletin are Available*

Back numbers of many volumes of the Bulletin of the School of Medicine are available.

An inquiry will be promptly acknowledged. Copies in stock can be purchased at \$2.00 per volume (single copies \$.50) as long as they last. All issues postpaid.

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MEDICAL SCHOOL SECTION

DEAN'S LETTER

In the reorganization of the Dean's Office an attempt is being made to provide a closer working arrangement with the administrative departments of the University, as well as to give more active coordination and supervision of the education and research programs of the Medical School.

A By-Laws Committee, chairmanned by Dr. George H. Yeager, is working on the basic statutes to govern the working relationships and policies of the administrative staff and faculty of the school of medicine. Their recommendation will not come up for faculty action until the Fall meetings.

To provide for basic administration and leadership, a tentative organization of the Dean's Office has been provided with the understanding that modification will likely continue to occur until the new by-laws have been adopted. The present administrative organization consists of:

- Dean and Director of Medical Education and Research
- Associate Dean in Charge of Student Affairs
- Associate Dean in Charge of Curriculum
- Associate Dean in Charge of Hospital Administration
- Director of Engineering and Plant Maintenance
- Director of Personnel
- Director of Business Office
- Registrar

The Associate Deans primarily deal with the medical education program while the other administrative positions are shared with other schools on the Baltimore campus.

The following standing committees of the School of Medicine will function during 1955-56:

1. Advisory Board of the Medical Faculty
2. Admissions
3. Examinations and promotions
4. Curriculum
5. Graduate education
6. Postgraduate education
7. Scholarship and loan
8. Medical planning and development
9. Research and publications
10. Hospital
11. Medical education for national defense
12. Library
13. Special lectures and visiting faculty
14. Medical emergency

Faculty meetings will be held in the 1st Floor Conference Room south wing of

the Psychiatric Institute Building. The old faculty room in the Medical School Building will become the Alumni Office. It is hoped that the Alumni Office will be used by returning graduates and become a spot where the undergraduate and graduates exchange ideas and develop friendships that will promote the educational program of the University.

The lack of an auditorium in the Baltimore Campus and the holding of graduation exercises at College Park has made it difficult for the medical students and faculty to meet. To welcome the freshman class and to provide an opportunity for faculty, students and friends to be together, opening exercises were initiated for the School of Medicine on September 21 in the Westminster Presbyterian Church. Following the exercise a tea in the Assembly Hall of the church was conducted by the Women's Board for faculty, students and friends.

In my previous letter I mentioned the need for a new outpatient building. You may recall the present building was formerly the old hospital, part of which was built in 1821. It is in a poor state of repair and inadequate for the number and type of clinics that must be conducted in our educational program.

If educational institutions are to maintain their role in a community, they must keep abreast of the times and consistently appreciate the need for change. In the latter role the School of Medicine must attempt to set the pattern of medical practice and health needs of the future. High costs of hospital care and the well trained physicians ability to handle many types of sickness and injury in the home or on an ambulant basis dictates that greater emphasis should be placed in the educational effort in the outpatient department. We are seeking planning money for a new outpatient building in the University's capital improvements budget. We hope that our friends will lend support to our request.

WILLIAM S. STONE

Dean and Director of Research

DR. ARTHUR LYMAN HASKINS, JR. NAMED PROFESSOR OF OB-
STETRICS AND GYNECOLOGY

Succeeds Dr. Louis H. Douglass Who Retired July 1

Dr. Arthur L. Haskins, Jr. was recently named Professor of Obstetrics & Gynecology by President Wilson H. Elkins and the Board of Regents of the University. Dr. Haskins assumed his position on July 1, 1955 immediately following the retirement of Dr. Louis H. Douglass.

Dr. Haskins is a native of Philadelphia, Pennsylvania and received his undergraduate collegiate training at the University of Rochester graduating in the class of 1938. He subsequently received his degree of Doctor of Medicine from the University of Rochester School of Medicine in 1943. Following a period of active duty in the United States Navy he became an intern in obstetrics and gynecology at the St. Louis Maternity and Barnes Hospitals, St. Louis, Missouri. The following year he became a Fellow in the United States Public Health Service, and served as Research Assistant in Obstetrics and Gynecology at the Washington University School of Medicine. The following year he became Associate Resident in Obstetrics and



Dr. Arthur L. Haskins, Jr.

Gynecology at the St. Louis Maternity and Barnes Hospitals, subsequently being appointed Resident in Obstetrics at the St. Louis Maternity Hospital from July 1, 1950 through June 30, 1951. He served a subsequent year as Resident in Gynecology at the same hospital.

In 1949 he was appointed Assistant in Obstetrics and Gynecology and was successively Instructor and Assistant Professor in Obstetrics and Gynecology being appointed to the latter post on July 1, 1954.

Dr. Haskins has done extensive research particularly with relationship to endocrine problems in pregnancy and sterility. He is certified by the American Board of Obstetrics and Gynecology, is a member of the St. Louis Gynecological Society, the American Medical Association, the American Academy of Obstetrics and Gynecology, the American Federation for Clinical Research and the Endocrine Society.

DR. ROBERT WILLIAM BUXTON APPOINTED PROFESSOR OF SURGERY

Dr. Robert W. Buxton was recently appointed Professor of Surgery at the School of Medicine by action of President Wilson H. Elkins and the Board of Regents.

Dr. Buxton comes to the University from the University of Michigan where he has served as Associate Professor of Surgery since 1950.

A native of Joplin, Missouri, he was graduated from Kansas University in 1931 and received his degree of Doctor of Medicine from Kansas University in 1936. He received a Master of Science degree from the University of Michigan in 1943.

Following his graduation from the Kansas University School of Medicine he served an internship at the Strong Memorial Hospital in Rochester, New York and was successively Assistant Resident in Pathology and later Surgery at the same hospital. He then became Resident in Surgery at the Genesee Hospital in Rochester



Dr. Robert W. Buxton

and later became Resident in Surgery at the Strong Memorial Hospital in the same city.

Turning his attention to thoracic surgery he next served a residency in this specialty at the University of Michigan and was subsequently appointed Instructor in Thoracic Surgery at the University of Michigan from 1942-1943. Since that date he has served successively as Instructor in Surgery, Assistant Professor of Surgery and Associate Professor of Surgery at the University of Michigan, his chief interest being in thoracic problems.

Dr. Buxton's interests have not alone centered with thoracic problems but have concerned themselves with many of the important problems in general surgery both thoracic and abdominal. He is a diplomate of the American Board of Surgery and is a member of the Society of University Surgeons, the American Surgical Association, the Central Surgical Association, the Society of Vascular Surgery, the International Society of Angiology, the Frederick A. Collier Surgical Society and is a Fellow of the American College of Surgeons. Dr. Buxton assumed his professional duties on September 1, 1955.

DR. D. C. SMITH NAMED ASSOCIATE DEAN

Dr. Dietrich Conrad Smith, Professor of Physiology in the School of Medicine, was recently appointed Associate Dean in an announcement by the Board of Regents, President Wilson H. Elkins and Dean William S. Stone.

Dr. Smith was born on March 21, 1901 in Pekin, Illinois. He received his baccalaureate degree from the University of Minnesota in 1923 and the Master of Arts degree the following year. He was awarded a Doctor of Philosophy degree from Harvard University in 1928. Following the completion of his graduate work he became a National Research Fellow in biological sciences at Harvard University and then studied abroad at the University of Munich as National Research Fellow in biological sciences during the year 1931. He did independent work at the Naples

Zoological Station of the Kaiser Wilhelm Institute and at the Bermuda Biological Station as well.

In 1933 he was appointed Instructor in Physiology at the University of Tennessee School of Medicine from which he came to the University of Maryland in 1937 as Associate Professor being promoted to Professor of Physiology in 1949.

Dr. Smith is widely known for his researches on the physiology of pigmentation, respiration and metabolic activity in the lower vertebrates and also for a variety of original researches in higher animals. In recent years he has devoted a great amount of his time to abnormal physiology of compression and gaseous exchange. He is the author of some of 41 original publications.

Dr. Smith has been active in the organization and conduct of the Maryland Society for Medical Research, serving as Secretary and Editor of the Society's publication. He was very influential in defeating the forces which would have prevented the use of dogs in experimental laboratory medicine and their activities several years ago.

As Vice-Chairman of the Post Graduate Committee Dr. Smith has been active in the development of post graduate planning and studies in the School of Medicine being largely responsible for the organization of the well known basic science curriculum for post graduate students. His services have been continually sought in surveys of hospitals and other medical schools, Dr. Smith being often absent for varying periods as an official observer of the School of Medicine with regard to academic programs in other medical schools.

As he assumes the duties of Associate Dean Dr. Smith will become Chairman of the Committee on Admissions and will be generally in charge of student activity and curriculum under the supervision of Dean William S. Stone.

A pleasant, forceful gentleman with a quiet and convincing attitude, a keen sense of responsibility and qualities of persistence, cooperativeness and tact, his appointment to this important post evidences both careful selection and ability.

Dr. Smith has been active in a number of scientific societies being a member of the American Association for the Advancement of Science, the Corporation for the Marine Biological Laboratory, the Corporation of the Bermuda Biological Station, the American Society of Zoologists, the American Physiological Society, the Endocrine Society, the American Association of Medical Colleges, Gamma Alpha and Sigma Xi Societies.

DR. CLIFFORD G. BLITCH NAMED DIRECTOR OF UNIVERSITY HOSPITAL

The Board of Regents of the University and President Wilson H. Elkins recently announced the appointment of Dr. Clifford G. Blitch as Director of the University Hospital succeeding Mr. George H. Buck.

A native of Florida, Dr. Blitch received his premedical training at the University of Florida and his degree of Doctor of Medicine at Vanderbilt University in the class of 1928. He then served his internship at the Station Hospital at Fort Sam Houston, Texas and later at Vanderbilt University Hospital in Nashville. For a time he was associate visiting physician at the Vanderbilt Hospital.

After a year of private practice he joined the United States Army Medical Corps



Dr. Clifford G. Blitch

and during World War II commanded hospitals in the Pacific area and from 1946-49 served in the office of the Surgeon General at Washington, D. C. From 1949 until 1953 he was superintendent of the Gorgas Hospital at Ancon, Canal Zone from which he was transferred to Camp Pickett and later to Camp Gordon, Georgia from which he came to the University Hospital.

Dr. Blitch is a member of Alpha Tau Omega, Alpha Kappa Kappa, and Alpha Omega Alpha medical societies. He is a Fellow of the American Medical Association and the American College of Physicians. Dr. Blitch assumed his duties as Director on June 1.

DR. EDWARDS RETIRES AS ACTING SURGICAL CHIEF

Dr. Charles Reid Edwards, Professor of Surgery, who has served as Acting Head of the Department of Surgery since the retirement of Dr. Arthur M. Shipley in 1948, relinquished his duties on August 15 to Dr. Robert W. Buxton, newly appointed Professor of Surgery and Chairman of the Department. Never a candidate for the Chairmanship of the Department, Dr. Edwards had managed the affairs of the Department of Surgery following Dr. Shipley's retirement.

He is an alumnus of the School of Medicine in the class of 1913. He served his internship at the University Hospital and was resident surgeon in 1915. With the advent of World War I he saw service overseas in Belfort, France. Upon the conclusion of hostilities he returned to private practice and became interested in teaching in the Department of Surgery under Dr. Arthur Shipley. He was gradually advanced to various clinical grades and in 1931 was made Professor of Clinical Surgery



Dr. Charles Reid Edwards

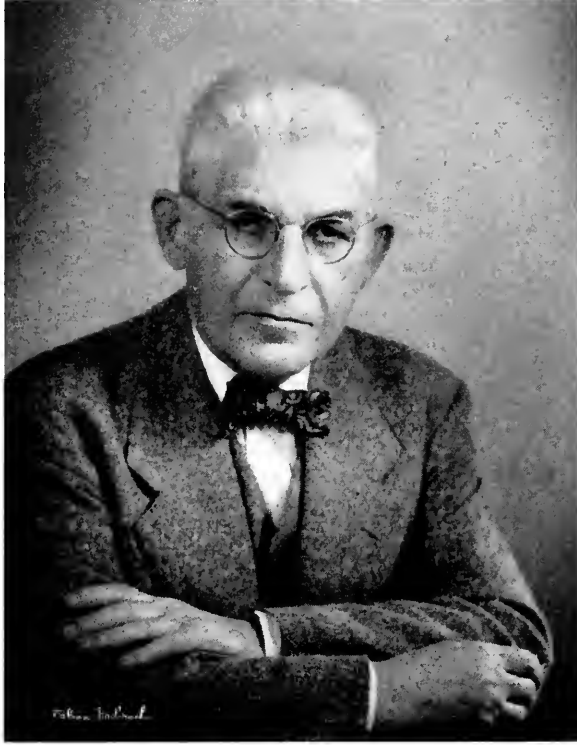
and was given a surgical teaching service at the University Hospital. In this capacity he continued until the retirement of Dr. Shipley in 1948.

One of the consistent and reliable consultants and advisors, Dr. Edwards is pre-eminently known among students as a forceful teacher, an expert clinical surgeon and an interested advisor. He has maintained a continued interest in clinical problems and is the author of numerous publications on widely diverse surgical subjects. He is a member of the American Medical Association, the Medical and Chirurgical Faculty of Maryland and a member of its Council for 9 years. He is a past president of the Baltimore City Medical Society, a Fellow of the American College of Surgeons and a member of its Board of Governors for 9 years. He is a member of the American Surgical Association, the Southern Surgical Association, the Society of Clinical Surgery and the Society for Surgery of Trauma.

Dr. Edwards will continue his clinical practice on the staff of the School of Medicine and the University Hospital.

DR. UHLENHUTH RETIRES

Dr. Eduard Uhlenhuth, for 30 years Professor of Anatomy in the School of Medicine and Chairman of the Department of Anatomy, retired on August 1, 1955. Dr. Uhlenhuth, a colorful and dynamic figure in the past quarter century of the University of Maryland School of Medicine, was born in Wolkersdorf, Austria on July 19, 1885. After receiving his preliminary education in the public schools of his home town he was graduated from the University of Vienna with a Doctor of Philosophy degree in 1911. For a while he taught in Europe and shortly after World War I



Dr. Uhlenhuth

came to the United States as a Rockefeller Fellow and later as an associate at the Rockefeller Institute in New York.

His scientific work began with interest in tissue culture and the transplantation of eyes and skin in amphibia. After his appointment as Professor of Anatomy at the University of Maryland he became interested in thyriotropic hormones and did extensive work with amphibia and reptiles in this direction. In later years his chief interest has centered about the anatomy of the pelvis. Dr. Uhlenhuth is the author of the well-known monograph "The Anatomy of the Pelvis". For the past 2 years he has also been actively engaged in translating into English the Sobotta Atlas of Anatomy.

In 1950 on the 25th anniversary of his coming to the University of Maryland, friends and former students held a testimonial dinner in his honor (see Bulletin, School of Medicine, University of Maryland, Vol. 35, no. 2, p. iii).

Among the many accomplishments in the Department of Anatomy which may be attributed to his organizational ability and scholarly interest include the installation of adequate facilities for teaching and research in anatomy upon the completion of the Bressler Research Laboratory. He has also been instrumental in developing prosected specimens for teaching and the development of injection specimens and various anatomic specimens mounted in the museum cases in the main hall and as a

collector of anatomic incunabula, the departmental library includes some of the more rare and important anatomic treatises many of which have been donated to the department through personal contracts.

A scholar of great energy and of sound convictions, a colorful personality, and a great teacher, his retirement closes better than a quarter century of progress and development in the Department of Anatomy. Dr. Uhlenhuth is succeeded by his associate, Dr. Frank H. J. Figge.

EDWARD B. TRUITT NAMED TO PHARMACOLOGY DEPARTMENT

Dr. Edward B. Truitt, Jr. has been recently named Associate Professor of Pharmacology in the School of Medicine effective September 1, 1955.

A native of Norfolk, Virginia where he received his preliminary education, Dr. Truitt is a graduate of Virginia Polytechnic Institute and of the Medical College of Virginia Department of Pharmacy in 1943 when he was awarded a Bachelor of Science degree in Pharmacy. He received his degree of Doctor of Philosophy from University of Maryland in 1950 having taken his graduate work under Dr. John C. Krantz, Jr. During this time he served as Markle Fellow in Pharmacology and American Foundation for Pharmaceutical Education Fellow, his thesis being on the subject of "The Pharmacologic Actions of Theophylline as Related to Blood Levels". Since 1950 he has served in the research department of a commercial organization. Dr. Truitt's scientific investigations have largely centered about the pharmacology of theophylline, halogenated benzoic acids.

He was the recipient of the Kappa Psi Medal of the School of Pharmacy, Medical College of Virginia in 1943.



Dr. Edward Truitt

ANATOMY DEPARTMENT UNDERGOES REORGANIZATION: DR. FRANK H. J. FIGGE NAMED PROFESSOR OF ANATOMY

Dr. Frank H. J. Figge, Professor of Anatomy at the School of Medicine has been appointed Professor and Chairman of the Department of Anatomy, succeeding Dr. Eduard Uhlenhuth who retired on August 1, 1955.

Dr. Figge who is a native of Colorado has been continuously associated with the School of Medicine since 1929 when he joined the Faculty of the Department of Anatomy. A seasoned anatomist and teacher, Dr. Figge has achieved international reputation for his researches in relationship of porphyrins and light to carcinogenesis. Dr. Figge has also been active in the American Cancer Society, serving as vice-president of the Maryland Division. He is also a member of the Executive



Dr. Frank Figge

Board of the American Association of Anatomists and is currently president of the Biological Stain Commission.

Coincident with his nomination as Chairman of the Department of Anatomy, Dr. Figge has announced revisions in the organization of his department. As currently planned, the anatomy department will be divided into several divisions including gross anatomy, neuroanatomy and histology. Dr. Figge will serve as director of the division of gross anatomy with other senior appointees serving in the other capacities. Each staff member of each division will serve his division in a major capacity but it is planned to have integration and overlapping of teaching activity between the various divisions. Dr. Eduard Uhlenhuth, who retired from the Professorship, has been named Research Professor of Anatomy and will continue his current investigations into the fascia of the pelvis.

The reorganized plan of the Anatomy Department not only includes intradepartmental integration but also interdepartmental activities as is noted below.

Gross Anatomy

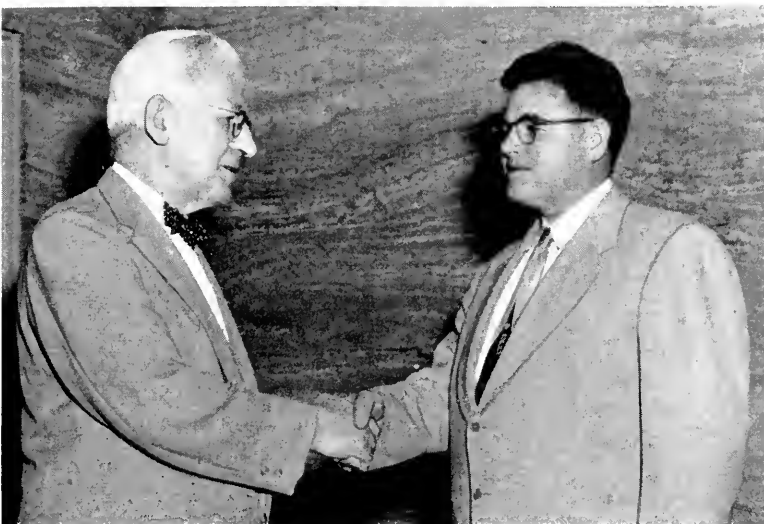
This division will be headed by Dr. Figge and will include Dr. Vernon E. Krah, Associate Professor of Anatomy, whose chief interest has been in histology and developmental phases of the lung. Dr. Karl F. Mech, Assistant Professor of Anatomy, is a well known Baltimore general surgeon. Other members of the department include Miss Gladys Wadsworth, Mr. Robert McCafferty and Mr. Zenis McDonald, Assistant and a graduate student in the Department of Anatomy. Current plans for



Dr. Vernon E. Krah



Dr. Karl F. Mech



Professorship changes: Dr. Uhlenhuth congratulates successor, Dr. Frank H. J. Figge

the teaching of anatomy include somewhat less time than heretofore devoted to anatomic dissection however, the increased use of audiovisual aids and projected specimens will offset the decrease in time allotted.

Neuroanatomy

The division of neuroanatomy will be under the direction of Dr. Walle J. H. Nauta who is currently neurophysiologist at the Neuropsychiatry Division, Army Medical Service Graduate School, Washington, D. C. Dr. Nauta was born in Medan, Indonesia on June 8, 1916. After his preliminary education at Leiden, Holland, he graduated from the School of Medicine, University of Leiden and also from the State University of Utrecht. He served his internship at the University Hospital in Leiden and received his degree of Doctor of Medicine in 1942. From 1942 to 1946 he was Assistant Professor of Anatomy and Examiner in Anatomy at the School of Dentistry at the University of Utrecht. He was granted the Doctor of Philosophy degree in 1945, also from the University of Utrecht. From 1946 to 1947 he was Associate Professor of Anatomy at the University of Leiden and from 1947 through 1951 was Associate Professor of Anatomy at the University of Zurich in Switzerland. In October, 1951, he came to America. Dr. Nauta has been a continuing and distinguished contributor to neuroanatomy and has also contributed several techniques for metallic impregnation of axons in the central nervous system.

Dr. Nauta will be joined by Dr. Henricus Gerardus J. M. Kuypers. Dr. Kuypers who comes to this country from Groningen in the Netherlands, is a native of Rotterdam being born on September 9, 1925. His preliminary education was obtained in Rotterdam and he was graduated from the University of Leiden School of Medicine and also from the School of Medicine in Zurich, Switzerland in May, 1954. He



Dr. Walle J. H. Nauta



Dr. Henricus Kuypers



Dr. H. Patterson Mack

received his degree of Doctor of Philosophy in 1952. From March, 1952 to May, 1954 he interned at the Clinical Institute in Rotterdam and later held residencies in the department of neurology of the University of Groningen from May, 1954 to 1955. At present Dr. Kuypers is assistant in neurology in the neurosurgical department of the University of Groningen. He is a member of numerous professional and lay organizations and is a member of the Dutch Neurologic and Psychiatric Organization (Neuropathologic Division). Dr. Kuypers will assist in the development of research and teaching in the division of Neuroanatomy. Dr. Motogi Miyazaki will serve as assistant in Neuroanatomy. Dr. Miyazaki is also currently an appointee and Fellow in the Division of Neurology under Dr. Charles Van Buskirk. The teaching of neuroanatomy will thus be formally connected with the division of Clinical Neurology.

Histology

This division will be headed by Dr. H. Patterson Mack who has been Assistant Professor of Anatomy in the department since his return from the Armed Forces. Dr. Mack is a graduate of the School of Medicine in the class of 1948. He will be assisted by Dr. Theodore Francois Leveque who comes to the School of Medicine from the Department of Anatomy at McGill University, Montreal. Dr. Leveque is a native of Lewiston, Maine and a graduate of the University of Colorado and the University of Colorado School of Medicine (September 1950). Dr. Leveque also received his degree of Doctor of Philosophy in Anatomy from the University of Colorado in June, 1954.

He has had experience in teaching at the University of Colorado, the University of Denver, and at McGill University in Montreal. Dr. Leveque's principal interest has been in neuro-secretion particularly with reference to stress and hypothalamic



Dr. Theodore Leveque

disturbances. He is a member of Phi Sigma Iota, Phi Sigma, Sigma Xi and the American Association of Anatomists.

DR. C. JELLEFF CARR LEAVES UNIVERSITY

Named Professor of Pharmacology, Purdue University School of Pharmacy

Dr. C. Jelleff Carr, Professor of Pharmacology in the School of Medicine, has resigned to become Professor of Pharmacology at the Purdue University School of Pharmacy in Lafayette, Indiana. Dr. Carr has assumed his new duties September 1, 1955.



Dr. C. J. Carr

A native of Baltimore and a graduate of the University of Maryland, he received his Bachelor of Science degree in 1933 and a Master of Science degree the following year. In 1937 he received the Doctor of Philosophy degree while serving as a member of the staff of the Department of Pharmacology with which he has been associated since 1934, as an associate of Dr. John C. Krantz, Jr.

In 1939 he received the Francis P. Garvin Scholarship of the American Chemical Society. Dr. Carr is a member of the American Society of Pharmacology and Experimental Therapeutics, the Society of Experimental Biology and Medicine, the American Chemical Society and the American Pharmaceutical Society. He is the author of numerous papers dealing with the metabolism of rare sugars and sugar alcohols, the pharmacology of drugs used in hypertension and drugs used in inhalation anesthesia. He is the co-author (with Dr. John C. Krantz, Jr.) of a very successful textbook "The Pharmacologic Principles of Medical Practice" which is now in its 4th edition. He is also a contributor to several medical and pharmacologic monographs.

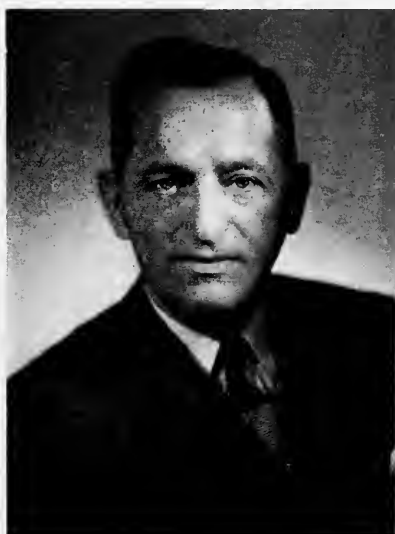
DR. SPENCER TO RETIRE

Dr. Hugh R. Spencer, Professor of Pathology, has announced his retirement from the Faculty effective July 1, 1956. It is expected that a committee will shortly be appointed to consider nominations for Dr. Spencer's successor.

DR. PESSAGNO NAMED CHIEF SURGEON AT MERCY HOSPITAL

Dr. Daniel J. Pessagno, Professor of Clinical Surgery at the School of Medicine and a member of the active staff of the Mercy Hospital was recently nominated Chief of Surgery at Mercy Hospital following the resignation and retirement of Dr. Walter D. Wise who served most ably in this capacity for many years.

Dr. Pessagno, an active clinical surgeon and teacher is a former president of the Medical Alumni Association and a member of the University of Maryland class of 1920.



Dr. D. J. Pessagno

PROGRESS ON RESTORATION OF OLD MEDICAL BUILDING

Current reconstruction and remodeling during the summer recess has included additional steps in the restoration of Chemical Hall. A group of unsightly blackboards dividing the lower portion of the amphitheatre have been removed and a group of ancient retorts and other antiquities have been exposed. Reconstruction will proceed toward the refurbishment of these interesting relics of former years in an attempt to ultimately restore the entire building to its former appearance.

Dean Stone has also announced considerable alteration within the Dean's office with the removal of old wainscoting and extensive redecoration in order to bring the Dean's office into harmony with the architectural period the building represents. Dr. Stone has also announced the removal of large areas of bulletin boards from the front entrance and relocation of the structures elsewhere. It is also his desire to improve the lighting and ventilation systems in Chemical and Anatomic Halls. A rostrum with proper amplification will also be installed.

DOCTOR JOHN DAVID YOUNG, JR. NAMED PROFESSOR OF UROLOGY

Doctor John David Young, Jr. was named Professor of Urology and Head of this division by President Wilson H. Elkins and the Board of Regents of the University. He assumed this position July 1, 1955.

Dr. Young was born in Westminster, Md. on August 28, 1917. He received his preliminary education at the Uniontown Elementary School and the New Winsor High School where he was graduated in 1924. He received a Bachelor of Science degree from Bridgewater College in 1938 and the degree of Doctor of Medicine from the University of Maryland in 1941.

Following this he interned at the Maryland General Hospital from July 1941 to June 1942. He then held the following residences:

Assistant Resident in Surgery, Maryland General Hospital, July 1942–December 1943.

Resident Surgeon, Maryland General Hospital, January 1944–June 1944.

Assistant Resident in Urology, University of Rochester Medical Center, October 1946–June 1949.

Resident in Urology, University of Rochester Medical Center, July 1949–June 1950.

From July 1944 thru September 1946 he was with the United States Army where he reached the rank of Captain M. C.

Doctor Young held the following appointments:

Urologist, University Hospital.

Urologist, Johns Hopkins Hospital.

Consultant Urologist, Baltimore City Hospitals.

Urologist, Maryland General Hospital.

Chief, Urology Out-Patient Department, University Hospital.

He also has held the following Medical School Appointments:

Associate in Urology, University of Maryland.

Instructor in Urology, Johns Hopkins University.

Doctor Young is a member of:

American Board of Urology, February 1954.

American Medical Association.

Baltimore City Medical Society.

Medical and Chirurgical Faculty of Maryland.

Mid-Atlantic Section of American Urological Association (pending).

CATALOGUE REJOINS BULLETIN

With the current revisions taking place in the Catalogue of the School of Medicine, it has been found desirable to again incorporate the Catalogue as a part of the Bulletin of the School of Medicine. This however will not interfere with the continuity of the scientific sections which will be published as heretofore.

Attention is called to the 4th number of the Bulletin which will appear as the Catalogue of the School of Medicine. Number 5 of volume 40 will complete the year and will be the October, 1955 number.

DEAN WYLIE BECOMES EMERITUS

By action of the Board of Regents of the University of Maryland, Dean H. Boyd Wylie, who retired from the School of Medicine on July 1, was named Dean Emeritus in the School of Medicine.

DR. PINCOFFS RECEIVES STENGEL MEMORIAL AWARD

Dr. Maurice C. Pincoffs, Professor and Head of the Department of Preventive Medicine at the School of Medicine, was recently awarded the Alfred Stengel Memorial Award by the Board of Regents of the American College of Physicians. This honor, established in 1947, has been awarded previously to 7 other physicians. To be eligible the candidate must have displayed an outstanding influence in maintaining and advancing the best standards of medical practice and clinical research in perpetuating the history and traditions of medicine and medical ethics in upholding the dignity and efficiency of internal medicine in its relation to public welfare.

Dr. Pincoffs is currently Editor of the *Annals of Internal Medicine* and is a Past-President of the American College of Physicians.

PROFESSOR O. G. HARNE RETIRES

Professor O. G. Harne, Associate Professor of Anatomy and Assistant to the Dean of Medicine at the School of Medicine retired on June 30, 1955 after a tenure of almost 35 years of continuous activity in the School of Medicine. Professor Harne began his career as a teacher in the Public School System of Frederick County and then received premedical training at George Washington University. At the beginning of World War I he transferred to the Army Medical School and was assigned to duty with the Mobile Field Laboratory No. 3, 37th Division, serving in France. After the war he returned to Washington in the departments of pharmacology and physiology at the George Washington University Medical School. In 1920 he came



Professor O. G. Harne

to the University of Maryland School of Medicine serving successively in the Departments of Pharmacology, Physiology and Anatomy. In 1947 he was appointed Assistant to the Dean.

Professor Harne will continue in his retirement with activity in the field of journalism.

TV-MD TO CONTINUE IN 1955-56

The Postgraduate Committee, in cooperation with WBAL and WBAL-TV, plans to resume the series of telecasts known as TV-MD, beginning on Sunday, October 2, 1955 from 2:30 until 3:00 P.M., and continuing every Sunday afternoon thereafter during the fall, winter and spring with the exception of certain holidays and on several dates when football games will be telecast.

The general theme of the new series will be **WHAT DOES IT MEAN?** For instance, "Rectal Bleeding—What Does It Mean?" "Sore Throat—What Does It Mean", etc.

It is the hope of the participating groups that this new series of programs will serve the same educational purpose to the general public, and with as much success, as in the past.

KERNAN HOSPITAL OFFERS NEW SERVICES FOR CRIPPLED CHILDREN

An announcement by the James Lawrence Kernan Hospital concerns the opening of a Rehabilitation Center with special emphasis on prosthesis and special bracing problems. The clinics which will be held on the second Monday of each month at 2 P.M. at the Hospital are under the direction of Dr. Milton J. Wilder of the School of Medicine and Assistant Professor of Orthopedic Surgery. Mr. William Neill, III will serve as physiotherapist and Mr. Charles H. Dankmeyer will be the prosthetist.

DEPARTMENT OF PSYCHIATRY RECEIVES POLIO GRANT

A grant from the National Foundation for Infantile Paralysis totalling \$29,466.00 was recently made to the School of Medicine for joint study of a combined research project to the Departments of Psychiatry and Pediatrics. The broad range psychologic study, already underway, will deal not only with polio patients but with their families as well. It is hoped that the project will result in knowledge relating to specific emotional personality and in the adjustment of the polio patient to his illness. It is desirable to determine what attitudes and expectations of his family color this adjustment to treatment, convalescence and recovery, after care and social situations. The ultimate objective of the study is to help develop techniques that will reduce the anxiety of the patients and their families about polio and its treatment.

UNIVERSITY SESQUI-CENTENNIAL IN 1957

Preliminary studies and discussions are now under way between co-ordinators from the various schools of the University in relationship to the projected plans for a year long Sesqui-Centennial Program in 1957. The first meeting of the Basic Committee was held on July 18, 1955 at which time preliminary plans for the organization of the entire program were discussed. The Bulletin will carry further details as plans develop.

DR. HUNDLEY RESIGNS PROFESSORSHIP OF GYNECOLOGY

Dr. J. Mason Hundley, Jr., Professor of Gynecology at the School of Medicine and since 1935 Chairman of the Department, resigned his post on September 1, 1955. Dr. Hundley expects to continue his private practice of gynecology and to retain his activity in the investigative problems of this specialty.

A graduate of St. John's College in Annapolis he completed his medical studies at Johns Hopkins University in 1916. He served abroad during World War I. In 1919 he became a member of the resident staff of the University Hospital, serving as resident in gynecology under his father, the late Dr. J. Mason Hundley who was at that time Professor of Gynecology. Following his hospital training he studied abroad and became active in the treatment of malignancies of the female generative tract, being credited with some of the pioneer work in the modern radiation therapy of carcinoma of the cervix. He was active in the organization of the Oncological Clinic (female oncology) at the School of Medicine and was also instrumental in developing the subdepartment of female urology. Dr. Hundley assumed the Chair following the death of his father in 1935.

Dr. Hundley has been continually active in investigative work and has also served actively in many professional societies including the American Medical Association, the Baltimore City Medical Society, the Medical and Chirurgical Faculty of Maryland, the American College of Surgeons, the Southern Medical Association, the Southern Surgical Association, the American Gynecological Society and the American Urological Society. He is also a member of the American Gynecological Travel Club, the American Association of Obstetricians, Gynecologists and Abdominal Surgeons.

An inveterate traveler, Dr. Hundley has not only studied extensively abroad but has visited clinics in many areas in Europe. For many years a dominant figure in the School of Medicine, a personable gentleman, his resignation closes an active career and a period of major development in the field of gynecology at the School of Medicine. With his resignation, the department of gynecology merges with the Department of Obstetrics under a single professorship.

DR. H. WHITMAN NEWELL, PSYCHIATRIST, DIES

Dr. H. Whitman Newell, Associate Professor of Psychiatry at the School of Medicine and Director of the Child Guidance Clinic, died on August 19, 1955 at his home in Baltimore.

A graduate of Amherst College and of the Western Reserve University School of Medicine, Dr. Newell had been a member of the faculty of the School of Medicine for many years and was largely responsible for the development of the Baltimore Child Guidance Clinic sponsored by the Community Chest.

A veteran of both World Wars, Dr. Newell served as Chief of Psychiatry in the 142nd General Hospital, a University of Maryland Unit. Including membership in many learned societies, Dr. Newell was past president of the American Orthopsychiatric Association.

ACADEMY OF GENERAL PRACTICE TO MEET IN BALTIMORE, OCTOBER 26-27, 1955

Ten guest speakers covering a wide variety of clinically important subjects will highlight the two day annual meeting of the Maryland Academy of General Practice to be held at the Sheraton Belvedere Hotel, October 26 and 27, 1955.

Dr. Merrill M. Cross in announcing the program emphasized that all the papers have been especially prepared for delivery to general practitioners and will be as conclusive as possible. Each session will include a panel discussion with questions and answers from the floor. The annual banquet which will be held at 7 P.M. will feature Mac F. Cahal, Executive Secretary of the Maryland Academy of General Practice. Details of the program can be obtained from Mr. William J. Wiscott, 3722 Greenmount Avenue, Baltimore 18, Maryland.

Highlights of the program will include an address by Dr. Austin I. Dodson on the *Treatment of Urinary Tract Infections*. Dr. John T. Howard of Baltimore will speak on *Gastroenterology*. A paper on *Orthopedic Problems* will be presented by Dr. Walter A. L. Thompson of New York University. Dr. Laurence F. Robbins of the Massachusetts General Hospital will speak on the subject of *Roentgenology and the General Practitioner*. The Thursday, October 27 session will be highlighted by a discussion of the *Medical Treatment of Thyroid Disease* to be presented by Dr. E. C. Bartels of the Lahey Clinic, Boston. Dr. Henry P. Laughlin, Assistant Professor of Psychiatry at the George Washington University School of Medicine will discuss *Psychiatry in General Practice*.

MEDICAL LIBRARY NOTES

LIST OF DONORS TO THE LIBRARY COLLECTION

May 1, 1955–August 1, 1955

Dr. Frank W. Hachtel
Dr. John C. Krantz, Jr.
Dr. Arthur M. Kraut
Dr. James H. Ramsey

Dr. E. Roderick Shipley
Dr. William S. Stone
Dr. H. Boyd Wylie

Medical Library Staff
in memory of
Paul T. Breed
and
Monroe T. Breed

From the estate of Mrs. Ruth Lee Briscoe, the library received from her son, Mr. C. Whitridge L. Briscoe, the collection of medical bookplates which Mrs. Briscoe had accumulated during her thirty-two years as medical librarian at the University of Maryland.

This extensive collection added to one more recently begun for the medical library by Mrs. Florence R. Kirk, reference librarian, covers an interesting variety of bookplates from physicians, medical institutions, and medical libraries. It will greatly increase the significance of the collection to add bookplates bearing the names of our alumni and faculty members, especially plates of original design. Send your individual bookplate to the medical library for the growing collection!

NEW APPOINTMENTS TO FACULTY, PROMOTIONS,
RESIGNATIONS

PROMOTIONS

Dr. Frank H. J. Figge—From Professor of Anatomy to Professor of Anatomy and Head of the Department

Dr. Harry M. Robinson, Jr.—From Associate Professor of Dermatology to Professor of Dermatology and Head of the Division

Dr. Milton S. Sacks—From Associate Professor of Clinical Medicine to Professor of Clinical Medicine

Dr. Robert C. Grenell—From Assistant Professor of Psychiatric Research to Associate Professor of Psychiatric Research

Dr. Samuel L. Fox—From Instructor in Physiology to Assistant Professor of Physiology

Dr. Leonard Scherlis—From Associate in Medicine to Assistant Professor in Medicine

Dr. Merrill J. Snyder—From Instructor in Microbiology to Assistant Professor of Microbiology

Dr. Henry H. Startzman, Jr.—From Instructor in Radiology to Associate in Radiology

Dr. Kyle Y. Swisher—From Instructor in Medicine to Associate in Medicine

Dr. Richard J. Cross—From Instructor in Otolaryngology to Associate in Otolaryngology

Dr. Frank J. Borges—From Instructor in Medicine to Associate in Medicine

Dr. David R. Will—From Assistant in Surgery to Instructor in Surgery

- Dr. **Arnold Tramer**—From Assistant in Pediatrics to Instructor in Pediatrics
- Dr. **August Kiel, Jr.**—From Assistant in Neurological Surgery to Instructor in Neurological Surgery
- Dr. **Frederick J. Heldrich, Jr.**—From Assistant in Pediatrics to Instructor in Pediatrics
- Dr. **Raymond M. Cunningham**—From Assistant in Surgery to Instructor in Surgery
- Dr. **Wilford A. H. Council, Jr.**—From Assistant in Urology to Instructor in Urology
- Dr. **Martin K. Gorten**—From Research Assistant in Pediatrics to Instructor in Pediatrics
- Dr. **Charles S. Ward**—From Assistant in Psychiatry to Instructor in Psychiatry
- Dr. **Sarah V. Huffer**—From Assistant in Psychiatry to Instructor in Psychiatry
- Dr. **Roger S. Waterman**—From Assistant in Psychiatry to Instructor in Psychiatry
- Dr. **Betty J. Fax**—From Research Associate in Psychiatry to Consultant in Psychiatry
- Dr. **Frank D. Vasington**—Assistant Professor of Biological Chemistry
- Dr. **Theodore F. Leveque**—Assistant Professor of Anatomy
- Dr. **Ray J. Beasley, Jr.**—Associate in Preventive Medicine and Associate Director of Medical Care Clinic
- Mr. **George W. Watson**—Associate in Public Health in the Department of Preventive Medicine
- Dr. **Irene L. Hitchman**—Associate in Psychiatry
- Dr. **Philip Whittlesey**—Instructor in Medicine
- Dr. **Giovanni Raccuglia**—Instructor in Medicine
- Dr. **Sze-Jui Liu**—Instructor in Medicine
- Dr. **Bennett L. Elisberg**—Instructor in Experimental Medicine
- Dr. **David A. Turner**—Instructor in Experimental Medicine
- Dr. **Charles Bagley, III**—Instructor in Psychiatry
- Dr. **Kurt H. Glaser**—Instructor in Psychiatry
- Dr. **Robert E. Trattner**—Instructor in Psychiatry
- Dr. **Philip C. Vail**—Instructor in Medical Psychology
- Dr. **Martha R. Westrope**—Instructor in Medical Psychology
- Dr. **Charles F. Carroll, Jr.**—Instructor in Pathology
- Dr. **Grange S. Coffin**—Instructor in Pediatrics
- Dr. **Patricia Elisberg**—Assistant Instructor in Pediatrics
- Dr. **Elizabeth Y. Pahk**—Clinical Instructor in Anesthesiology
- Dr. **William S. Spicer, Jr.**—Assistant in Medicine
- Dr. **Frank G. Kuehn**—Assistant in Medicine
- Dr. **Benjamin Rothfeld**—Assistant in Medicine

NEW APPOINTMENTS

- Dr. **Arthur L. Haskins**—Professor of Obstetrics and Head of the Department
- Dr. **Robert W. Buxton**—Professor of Surgery and Head of the Department
- Dr. **Walle J. H. Nauta**—Professor of Anatomy
- Dr. **Edward B. Truitt, Jr.**—Associate Professor of Pharmacology
- Dr. **Florence I. Mahoney**—Associate Professor of Physical Medicine
- Dr. **John G. Wiswell**—Assistant Professor of Medicine
- Dr. **Carroll L. Spurling**—Assistant Professor of Medicine (Division of Hematology)

- Dr. Jacob Ludwig—Assistant in Dermatology
- Dr. Charles S. Ward, Jr.—Assistant in Psychiatry
- Dr. Jordan M. Scher—Assistant in Psychiatry
- Mr. Arthur R. Jensen—Assistant in Medical Psychiatry
- Mrs. Joan H. Remy—Assistant in Medical Psychiatry
- Dr. Bate C. Toms, Jr.—Assistant in Surgery
- Dr. Henry E. Langenfelder—Assistant in Surgery
- Dr. Charles E. Simons, Jr.—Assistant in Surgery
- Dr. Charles W. McGrady, Jr.—Assistant in Surgery
- Dr. Jacob Zimmerman—Assistant in Surgery
- Mr. Roger H. Davidheiser—Assistant in Anatomy
- Mr. Zenas A. McDonald—Assistant in Anatomy
- Dr. Motoji Miyazaki—Assistant in Anatomy
- Dr. Francis S. Gardner, Jr.—Assistant in Gynecology
- Dr. Benson C. Schwartz—Assistant in Gynecology
- Dr. James L. Eavey—Assistant in Obstetrics and Assistant in Gynecology
- Dr. Frank W. Baker—Assistant in Obstetrics
- Dr. John W. Heisse, Jr.—Assistant in Otolaryngology
- Dr. O. V. Rama Row—Assistant in Pediatrics
- Dr. James M. Bisanar—Assistant in Pediatrics
- Dr. Kathleen R. McGrady—Assistant in Pediatrics
- Dr. Alvin A. Stambler—Assistant in Pediatrics
- Dr. William S. Parker—Assistant in Pediatrics
- Dr. John M. Krager—Assistant in Pediatrics
- Dr. Frederick K. Bell—Assistant in Pharmacology
- Dr. Irving Scherlis—Assistant in Urology
- Miss Elsa F. Jahn—Research Associate in Clinical Pathology
- Mrs. Dorcas H. Padget—Research Associate in Neurological Surgery
- Dr. John M. Allen—Fellow in Surgery
- Dr. Santiago Lombano—Fellow in Thoracic Surgery
- Dr. George Schimert—Fellow in Surgery (Cardio-vascular Division)
- Dr. John O. Sharrett—Fellow in Neurosurgery
- Dr. Robert J. Lancaster—Fellow in Medicine
- Dr. Sherwood P. Miller—Fellow in Medicine
- Dr. Motoji Miyasaki—Fellow in Neurology
- Dr. Sydney S. Katz—Fellow in the Division of Legal Medicine
- Dr. Charles B. Wheeler, Jr.—Fellow in the Division of Legal Medicine
- Miss Betty I. Ivens—Public Health Service Research Fellow
- Mr. Harold R. White—Fellow in Biological Chemistry
- Mr. Robert H. Weaver—Fellow in Biological Chemistry
- Mr. Donald R. Helinski—Fellow in Biological Chemistry
- Dr. Bernard Glueck—Consultant in Psychiatry
- Miss Susan R. Jenkins—Research Assistant in Anatomy
- Miss Dorothy A. Forestell—Research Assistant in Dermatology
- Miss Diane N. Stewart—Research Assistant in Medicine
- Miss Sheila R. Bloch—Research Assistant in Pediatrics
- Miss Ruth J. Baumgartner—Research Assistant in Pediatrics

Mr. Alfred S. C. Ling—Research Assistant in Pharmacology
Mr. Myron I. Wolbarsht—Research Assistant in Psychiatry
Mrs. Carole L. Rubin—Research Assistant in Psychiatry
Miss Margaret W. Wood—Medical Artist in the Department of Anatomy

RESIGNATIONS

Dr. Louis H. Douglass—Professor of Obstetrics and Head of the Department
Dr. C. Jelleff Carr—Professor of Pharmacology
Prof. O. G. Harne—Associate Professor of Anatomy and Assistant to the Dean
Dr. Hans W. Leowald—Assistant Professor of Psychiatry
Dr. James H. Ramsey—Assistant Professor of Pathology
Dr. Roy B. Turner—Assistant Professor of Pathology
Dr. Charles E. Brambel—Assistant Professor of Medicine
Dr. James Russo—Clinical Instructor in Anesthesiology (leave of absence)

Dr. William N. Fitzpatrick—Instructor in Psychiatry
Dr. Betsy G. Wooten—Instructor in Psychiatry
Dr. Henry W. D. Holljes—Director of Medical Care Clinic (leave of absence)
Dr. Raymond M. Lauer—Assistant in Medicine
Mrs. Ann L. Trucker—Research Assistant in Psychiatry
Mrs. Barbara E. Stewart—Research Assistant in Psychiatry
Mr. Edwin L. Poole—Research Assistant in Physiology
Mrs. Ann L. Liu—Research Assistant in Anatomy
Miss Carolyn P. Hendrickson—Research Assistant in Physiology
Miss Marjorie G. Huck—Research Assistant in Dermatology
Mrs. Doris M. Goucher—Research Assistant in Pediatrics
Mrs. Elizabeth R. Shaw—Research Assistant in Biochemistry
Mrs. Margaret M. Collins—Research Assistant in Pediatrics
Dr. Jack H. Mendelson—Fellow in Psychiatry

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* July 1, 1955 to June 30, 1956

PRESIDENT'S MESSAGE

Dear Members of the Medical Alumni Association wherever you may be:

May I take this opportunity to report to you relative to items of interest regarding the Medical Alumni Association. First, I wish to thank you for reposing in me your confidence by electing me President of the Association for the ensuing year. I shall do my best to merit that confidence.

An increase in membership is always a happy item to report. Since May 1, 1955 our membership has been increased by approximately 350 members. Certainly this is evidence of an awakened interest in the Association.

I am also happy to report that Doctor H. Boyd Wylie, Present Dean Emeritus has been selected to fill the unexpired term of Doctor Oliver Lloyd who found it necessary to resign from the Board of Directors. Doctor Wylie will make a most valuable addition to the Board.

It also gives me great pleasure to announce there is a great possibility that, in the near future, we will obtain new quarters for the Alumni Association. If the plan goes through these quarters will be sufficiently large and so located that a most attractive meeting place for the Association will be available. They will be centrally located for all Alumni who may be spending some time in Baltimore.

At the present time, your President; Doctor William Stone; our Present Dean and Director of Medical Education and Research and Doctor William H. Triplett; Executive Director of the Medical Alumni Association have accepted the kind invitation of the Maryland Alumni of the West Virginia Medical Association to meet with them at the Annual dinner at White Sulphur Springs. This is the first time that such an invitation has been extended, and I feel sure that it will be a

most pleasant experience for all concerned. Perhaps this can be repeated when other state and county associations hold such a meeting.

While we are extremely pleased in the increase in membership, we feel that this is only a "drop in the bucket" so far as new members are concerned. Let each one of us who receives this message immediately appoint himself a committee of one to procure at least one new member (more if possible). In this way, we can increase our membership to the mutual benefit of both the association and the new members. Should any member desire to go further and to form a new membership committee in his locality, be it county or state, the office in Baltimore stands ready and willing to give you all aid and assistance within its power so to do.

Best wishes.

J. MORRIS REESE, M.D.

NAMED ALUMNI ASSOCIATION PRESIDENT FOR 1956

Dr. J. Morris Reese, Associate Professor of Obstetrics in the School of Medicine and a member of the class of 1920 was elected President of the Medical Alumni Association, succeeding Dr. Frank J. Geraghty who became Chairman of the Board of Directors. Vice-Presidents include Drs. Roy Guyther, class of 1943, Norman E. Sartorius, class of 1937 and Bernard Thomas of the class of 1938. Dr. J. Emmett Queen, class of 1943 was elected Assistant Secretary. Elected to the Board of Directors were Dr. Frank N. Ogden, class of 1917, Dr. J. Sheldon Eastland, class of 1925 and Dr. H. Boyd Wylie, class of 1911 and Dean Emeritus of the School of Medicine.



J. Morris Reese, M.D.

ALUMNI DAY 1955

Members of the Medical Alumni Association numbering several hundred attended the scientific sessions and social functions incident to Alumni Day which was held this year on June 2, 1955.

The morning program consisted of a series of television clinics presented by the Faculty of the School of Medicine, the Post Graduate Committee, the Maryland Academy of General Practice and the Medical Alumni Association in collaboration with the Read Drug Company of Baltimore and station WBAL-TV. The School of Medicine has been experimenting for some time with closed circuit television teaching and the occasion of Alumni Day marked the first use of closed circuit RCA-Color Television in medical teaching. Clinics included demonstrations on burns, dermatologic problems, ophthalmologic lesions and studies on shock, all papers being given by members of the Faculty of the School of Medicine. Television viewers were installed in Gordon Wilson Hall.

Following the scientific session the luncheon attended by more than 150 alumni was held in the Recreation Room of the Psychiatric Institute. At this time Dr. George W. Rice, class of 1916, a retired Major General in the Medical Corps of the United States Army and currently City Manager of San Antonio, Texas, was presented the Alumni Association Honor Award and gold key by President Frank J. Geraghty.

Election of officers of the Medical Alumni Association and the business meeting followed.

Reunions and cocktail parties were held by the reunion classes of 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1944, 1945, 1950 and were followed by the annual dinner at the Lord Baltimore Hotel attended by more than 400 alumni and friends of the School of Medicine. Twenty-one members of the class of 1905 were present to receive their fifty-year certificates from the hands of Dr. Frank Geraghty. Other honor guests included the Medical School graduating class of 1955.

The following alumni of the School of Medicine registered on Alumni Day.

1895

Nicholas G. Wilson

1902

Ernest G. Hummel

1903

Edgar B. Friedenwald
Charles B. Ensor
C. W. Lurting

1905

Saverio Agnelli	George Rosenbaum
Vance Brabham	Jacob Rosenstein
E. E. Clovis	E. McQueen Salley
Henry L. Criss	Benjamin F. Tefft
I. Dana Kahle	William E. Van Landingham
James G. Mathews	Frederick J. Waas

1910

George C. Coulbourn	Gail W. Kahle	John G. Runkel
D. J. Cronin	Winfield Kohn	Herman Seidel
Joseph C. George	J. Walter Layman	George Seymour
George H. Grisinger	George W. Murgatroyd	Maurice E. Shamer
A. L. Hyatt	Walter I. Neller	George F. Sprecher

1911

Louis H. Douglass
John F. Hogan, Sr.
Francis H. Hutchinson
William H. Triplett

1912

C. Loring Joslin
H. Boyd Wylie

1913

C. Reid Edwards
W. H. Toulson

1914

Austin H. Wood

1915

Ernest M. G. Rieger
William R. Johnson

1916

H. M. Stein

1918

Thomas C. Speake

1920

Philibert Artigiani	F. A. Holden	W. K. McGill
Howard M. Bubert	A. H. Jackvony	William J. B. Orr
Alfred Comas	Angel M. Janer	J. Morris Reese
Louis C. Dobihal	William Leuders, Jr.	J. W. Skaggs
	Fred B. Smith	

1921

Daniel F. Keegan
Thomas R. O'Rourke

1922

T. N. Wilson

1924

Clewell Howell

1925

S. P. Balcerzak	Harold Fischman	Joseph Nataro
Leo T. Brown	James G. Howell	Henry Oshrin
Arthur A. Cope	Samuel S. Glick	Leo Pulaski
Eva M. Dodge	Edgar R. Miller	J. M. Silverstein
Jacob Dreskin	George Liebensperger	M. M. Wassersweig
Francis A. Ellis	Charles A. Minnefor	Conrad Zimmerman

1926

Frank J. Geraghty	Louis T. Lavy	H. Edmund Levin
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1927

T. Nelson Carey	A. H. Finkelstein	Frank K. Morris
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1929

George H. Yeager

1930

J. Rudolph Berke	John H. Hornbaker
Matthew J. Coppola	Thomas Magovern
Clay E. Durrett	Egbert L. Mortimer, Jr.
Vincent J. Fiocchi	Nathan E. Needle
Samuel J. Fisher	Zack D. Owens
Emil G. Hildenbrand	Nicholas M. Romano
Louis R. Schoolman	

1932

Harry C. Hull John E. Savage

1933

Sidney Novenstein

1934

Thurston R. Adams Robert W. Farr Manuel Levin

1935

John B. Anderson	John H. Hugg	Sol Rosen
D. T. Battaglia	Josiah A. Hunt	Milton Schlachman
Ernest I. Cornbrooks, Jr.	Irving Klompus	Sydney H. Shapiro
Edward F. Cotter	C. R. Layton	Benjamin M. Stein
Robert L. Dubois	Walter Lichtenberg	Louis H. Teitel
Ferdinand Fader	Saul Lieb	Harry A. Teitelbaum
Walter H. Gerwig, Jr.	Donald C. MacLaughlin	Joseph Tuby
John R. Godbey	Howard B. Mays	J. Frank Williams, Jr.
John C. Hamrick	A. W. McGregor	Norman J. Wilson
Jeannette R. Heghinian	Philip Owen	Everet H. Wood
William G. Helfrich	Harry M. Robinson, Jr.	Lewis K. Woodward, Jr.

1936

Harry C. Bowie	Walter E. Karfgin
George H. Davis	Gibson J. Wells

1937

Eugene S. Bereston	Everett S. Diggs
D. Frank Kaltreider	Isadore Kaplan
Samuel T. R. Revell, Jr.	

1938

Melvin N. Borden Louis C. Gareis Robert C. Sheppard

1939

Dexter L. Reimann

1940

Daniel C. Barker	William C. Livingood
Edmund G. Beacham	F. Ford Loker
Lester H. Caplan	William R. Platt
John T. Cole	Raymond C. V. Robinson
Joseph DeLuca	A. Frank Thompson
Benjamin H. Inloes	W. H. Townshend
Robert E. Lartz	Richard T. Williams

1941

Francis S. Renna John D. Young, Jr.

1942

Theodore Kardash Charles H. Williams

1943

Robert M. N. Crosby	Frederick W. Lurting
John S. Haught	Edwin H. Stewart, Jr.
David R. Will	

1944

R. Adams Cowley	Louis J. Pratt, Jr.
W. Carl Ebeling	F. X. Paul Tinker
William Osborne	Roy B. Turner

1945

George R. Callender, Jr.	William H. Frank
Eugene H. Conner	John A. Hedrick
Sarah Cook	William A. Holbrook
John M. Dennis	A. J. O'Neill
Stanley R. Steinbach	

1946

William D. Gentry, Jr.	Raymond L. Markley
Vernon E. Krah	Jerome D. Nataro
Joseph B. Workman	

1947

John F. Hogan, Jr. Robert C. Hunter William Schnitzker

1948

H. Patterson Mack Kyle Y. Swisher

1949

Nathan Schnaper

1950

William M. Baumann	Fred T. Edmunds	John C. Hyle
Fred J. Burkey	Sarah Virginia Huffer	Henry H. Startzman, Jr.

1951

James P. Gallaher Robert K. Arthur, Jr.

1953

G. R. Brinkley, Jr. Charles F. Carroll, Jr.

1954

Robert B. Goldstein David A. Levy I. H. Moss

FACULTY AND ALUMNI FETE DEAN WYLIE

Nearly 150 alumni of the School of Medicine and members of the Faculty attended a testimonial dinner in honor of Dr. H. Boyd Wylie, retiring Dean, the dinner being held at the Hotel Sheraton-Belvedere in Baltimore on June 28, 1955. Friends of Dr. Wylie presented him with a very beautiful Oriental rug. Dr. Dietrich C. Smith was Chairman of the Committee.

Addresses were given by Dr. Wetherbee Fort, Past President of the Medical Alumni Association and Dr. Maurice C. Pincoffs, Professor of Preventive Medicine. Dr. John C. Krantz, Jr., Professor of Pharmacology was Toastmaster.

MEDICAL ALUMNI PLAN SOUTHERN MEDICAL
ASSOCIATION FUNCTION

*Cocktail Party to be Held in Conjunction with S.M.A. Meeting in Houston,
Texas, November 14-17, 1955*

Dr. William H. Triplett, Director of the Medical Alumni Association, has announced that a cocktail party for Maryland alumni and their ladies attending the Southern Medical Association Meeting in Houston, Texas, will be held on Tuesday evening, November 15 at the Houston Club from 7 to 9 o'clock. The local committee chairman is Dr. John Roberts Phillips, class of 1927, 407 Medical Arts Building, Houston 2 Texas.

All Maryland alumni are urged to give this entertainment first priority in the making of their plans to attend the Southern Medical Association Convention.

ALUMNUS NOMINATED VICE-PRESIDENT OF NEW JERSEY
SOCIETY

Dr. Albert Kump, class of 1938, was recently elected first Vice-President of the Medical Society of New Jersey. Dr. Kump is in practice in Bridgeton, New Jersey.



Alumni at 1955 A. M. A. Meeting Dinner

ALUMNI DINNER AT AMERICAN MEDICAL ASSOCIATION DINNER A SUCCESS

Over 38 alumni of the School of Medicine and their wives attended the second annual A.M.A.-Medical Alumni Association dinner held in conjunction with the annual meeting of the American Medical Association. This year's dinner held in Atlantic City at the Chalfonte-Haddon Hall had an even larger attendance than the dinner held in San Francisco in 1954. Plans of the Medical Alumni Association include such a reunion and dinner at every American Medical Association meeting. Watch the Bulletin for announcement of the 1956 dinner and mixer.

DR. MARGARET E. MORGAN HONORED

Dr. Margaret E. Morgan, class of 1941, has received considerable mention for her work at the Larue Carter Memorial Hospital in Indianapolis, Indiana where she is administrative head of the Indiana Mental Health System. Dr. Morgan's work in that field was recently cited by the American Psychiatric Association. A qualified surgeon as well as a psychiatrist, she left an assistant professor's position at the Indiana University School of Medicine to modernize care of Indiana's mentally ill. Her position is an important one in Indiana's Department of Health.

8727
September, 1955

BULLETIN OF THE
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VOLUME 40

NO. 4

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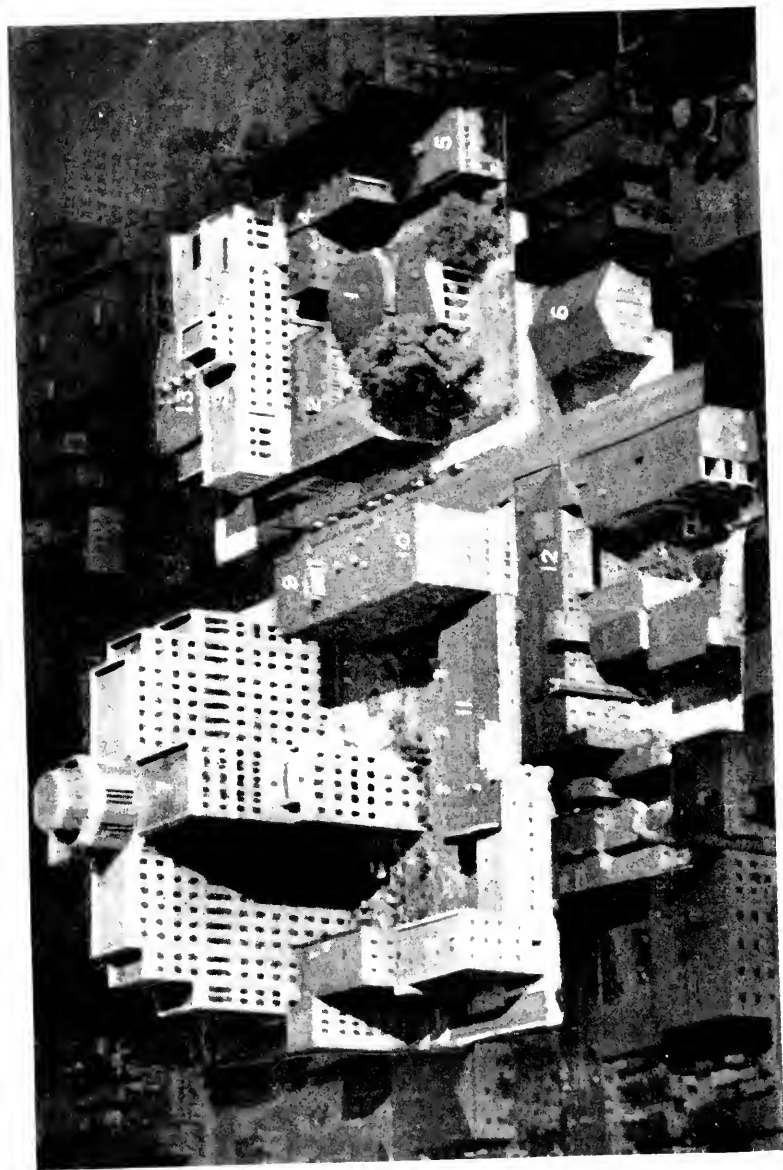
NOTE

This catalogue was closed for the press on May 31, 1955. The announcements and lists of names have been made as accurate as possible, but the right is reserved to make changes whenever it is expedient. Accordingly, the information provided may not be accurate, in every instance, for the period involved.

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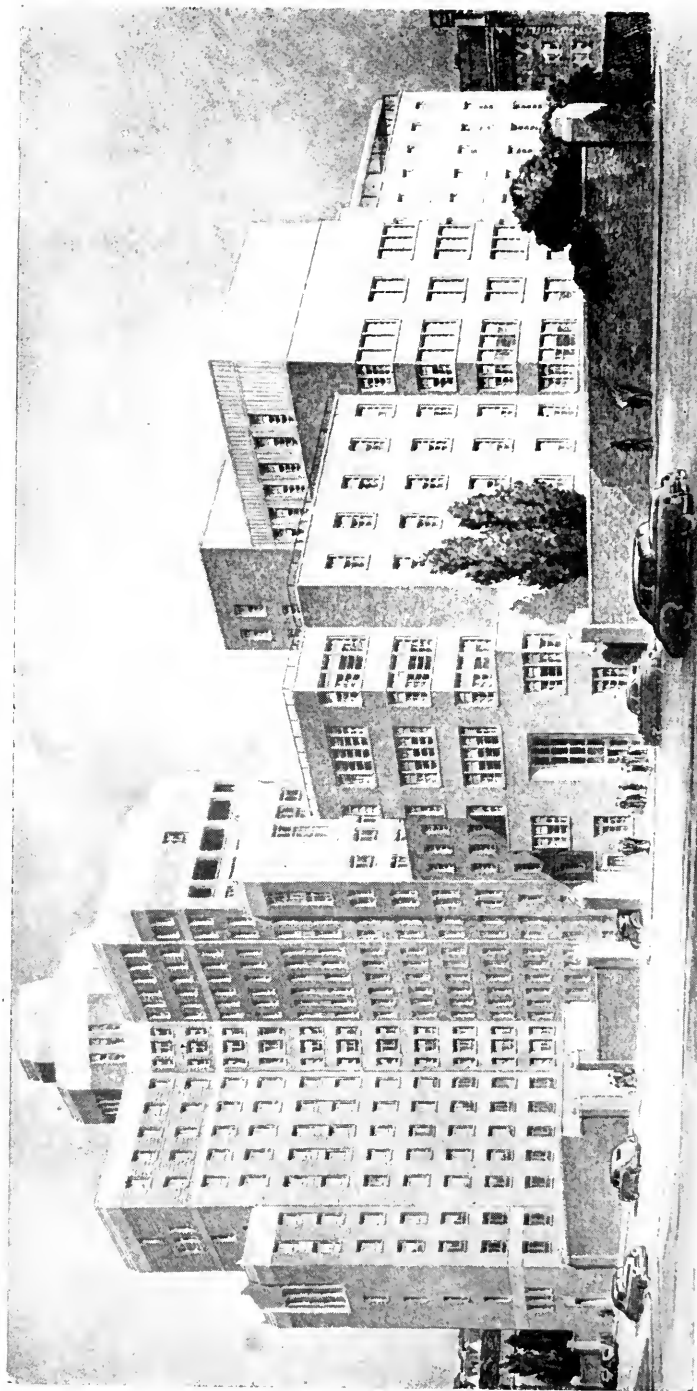
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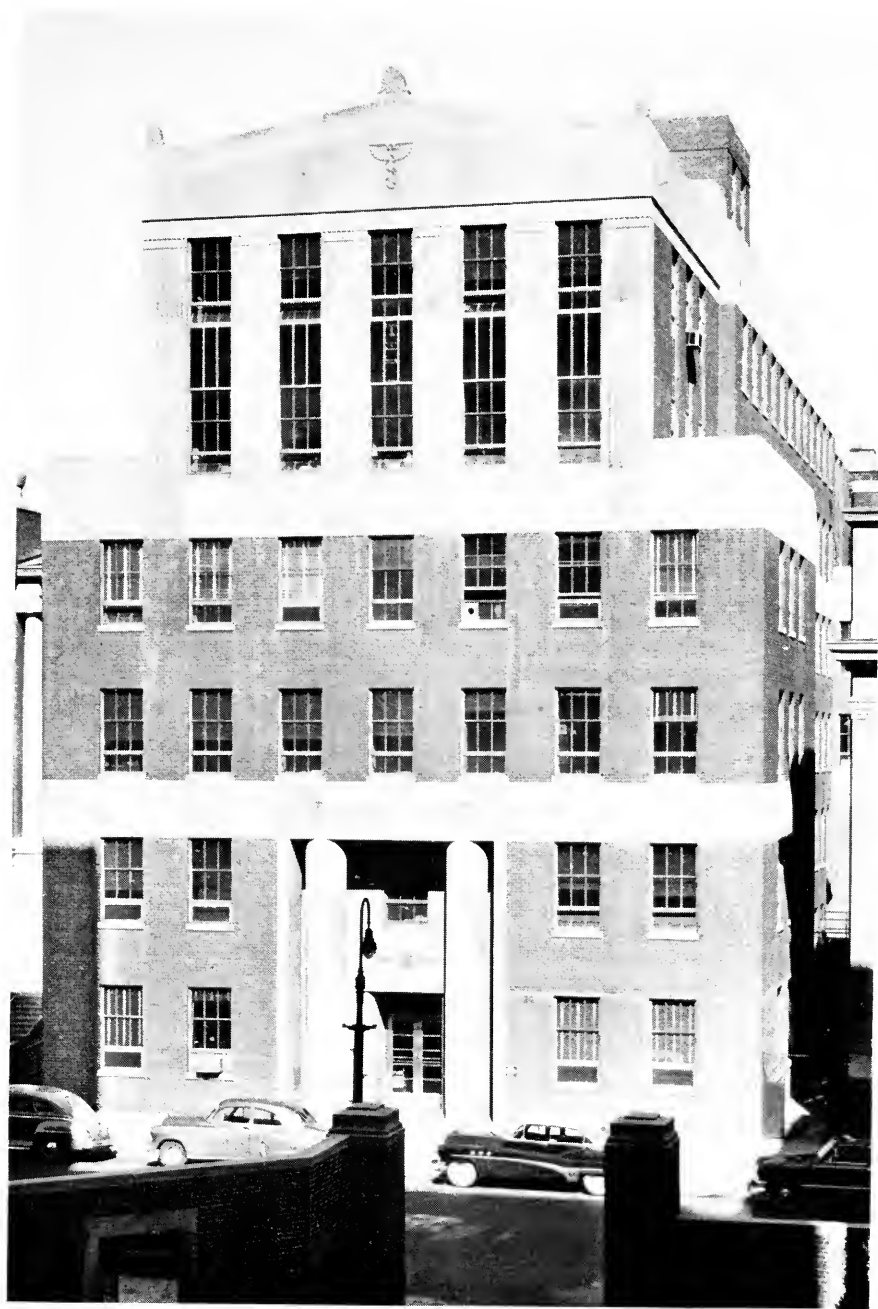
Announcements for

The One Hundred Fiftieth Academic Session
1955-1956

Catalogue of
The One Hundred Forty-Ninth Academic Session
1954-1955



University Hospital Showing the Psychiatric Institute in the Foreground



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1955							1956							1957														
JULY							JANUARY							JULY							JANUARY							
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S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
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4	5	6	7	8	9	10	4	5	6	7	8	9	10	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
11	12	13	14	15	16	17	11	12	13	14	15	16	17	9	10	11	12	13	14	15	10	11	12	13	14	15	16	
18	19	20	21	22	23	24	18	19	20	21	22	23	24	16	17	18	19	20	21	22	17	18	19	20	21	22	23	
25	26	27	28	29	30		25	26	27	28	29	30	31	23	24	25	26	27	28	29	24	25	26	27	28	29	30	
														30							31							
OCTOBER							APRIL							OCTOBER							APRIL							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
						1	1	2	3	4	5	6	7		1	2	3	4	5	6		1	2	3	4	5	6	
2	3	4	5	6	7	8	8	9	10	11	12	13	14	7	8	9	10	11	12	13	7	8	9	10	11	12	13	
9	10	11	12	13	14	15	15	16	17	18	19	20	21	14	15	16	17	18	19	20	14	15	16	17	18	19	20	
16	17	18	19	20	21	22	22	23	24	25	26	27	28	21	22	23	24	25	26	27	21	22	23	24	25	26	27	
23	24	25	26	27	28	29	29	30						28	29	30	31				28	29	30					
30	31																										
NOVEMBER							MAY							NOVEMBER							MAY							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
			1	2	3	4				1	2	3	4	5					1	2	3	4					1	2
6	7	8	9	10	11	12	6	7	8	9	10	11	12	4	5	6	7	8	9	10	5	6	7	8	9	10	11	
13	14	15	16	17	18	19	13	14	15	16	17	18	19	11	12	13	14	15	16	17	12	13	14	15	16	17	18	
20	21	22	23	24	25	26	20	21	22	23	24	25	26	18	19	20	21	22	23	24	19	20	21	22	23	24	25	
27	28	29	30				27	28	29	30	31			25	26	27	28	29	30		26	27	28	29	30	31		
DECEMBER							JUNE							DECEMBER							JUNE							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
					1	2						1	2						1	2	3					1		
4	5	6	7	8	9	10	3	4	5	6	7	8	9	2	3	4	5	6	7	8	2	3	4	5	6	7	8	
11	12	13	14	15	16	17	10	11	12	13	14	15	16	9	10	11	12	13	14	15	9	10	11	12	13	14	15	
18	19	20	21	22	23	24	17	18	19	20	21	22	23	16	17	18	19	20	21	22	16	17	18	19	20	21	22	
25	26	27	28	29	30	31	24	25	26	27	28	29	30	23	24	25	26	27	28	29	23	24	25	26	27	28	29	
														30	31						30							

CALENDAR

ACADEMIC YEAR—SEPTEMBER 22, 1955 TO JUNE 9, 1956

1955

September 13, 14, 15 Re-examinations for advancement

FIRST SEMESTER—September 22, 1955 to January 28, 1956

September 20	Tuesday	*Registration, payment of fees, freshmen & sophomores
September 21	Wednesday	*Registration, payment of fees, all other students
September 22	Thursday	Instruction begins at 8:00 a.m.
November 22	Tuesday	Instruction suspended at 5:00 p.m. Thanksgiving Holiday
November 28	Monday	Instruction resumed
December 21	Wednesday	Instruction suspended at 5:00 p.m. Christmas Holiday

1956

January	3	Tuesday	Instruction resumed
January	23	Monday	Midyear examinations begin. (Junior and Senior classes continue throughout this week) *Payment of fees for second semester
January	28	Saturday	First semester completed, 2:00 p.m.

SECOND SEMESTER—January 30 to June 9, 1956

January	30	Monday	Instruction begins
February	22	Wednesday	Holiday—Washington's Birthday
February	23	Thursday	Instruction resumed
March	29	Thursday	Instruction suspended at 5:00 p.m. Easter Holiday
April	3	Tuesday	Instruction resumed
April	19	Thursday	Juniors and Seniors excused to attend annual meetings of the Medical & Chirurgical Faculty
April	20	Friday	
May	26	Saturday	Junior and Senior classes cease at 12:00 M.
May	28	Monday	Freshman, Sophomore and Junior examinations begin
May	30	Wednesday	Holiday—Memorial Day
June	4	Monday	Announcement of graduates
June	9	Saturday	Commencement Second semester completed at 12:30 p.m.

PARTIAL CALENDAR FOR 1956-57

1956

September 11, 12, 13		Re-examinations for advancement
September 18	Tuesday	*Registration, payment of fees, freshmen & sophomores
September 19	Wednesday	*Registration, payment of fees, all other students
September 20	Thursday	Instruction begins

* All students are expected to complete their registration, including the payment of bills prior to or on regular registration days. Those who do not complete their registration on the prescribed days will be charged a fee of \$5.00.

The offices of the registrar and comptroller are open daily from 9:00 A.M. to 4:00 P.M., and Saturday from 9:00 A.M. to 12:00 noon.



ORGANIZATION

THE UNIVERSITY OF MARYLAND

WILSON H. ELKINS, PH.D., *President and Executive Officer*

BOARD OF REGENTS

	<i>Term Expires</i>
WILLIAM P. COLE, JR., <i>Chairman</i>Baltimore.....	1958
B. HERBERT BROWN.....Baltimore.....	1960
EDMUND S. BURKE.....Cumberland.....	1959
EDWARD F. HOLTER.....Middletown.....	1959
LOUIS L. KAPLAN.....Baltimore.....	1961
ARTHUR O. LOVEJOY.....Baltimore.....	1960
CHARLES P. MCCORMICK.....Baltimore.....	1957
HARRY H. NUTTLE.....Denton.....	1957
THOMAS B. SYMONS.....College Park.....	1963
C. EWING TUTTLE.....Baltimore.....	1962
MRS. JOHN L. WHITEHURST.....Baltimore.....	1956

Members of the Board are appointed by the Governor of the State for terms of nine years each, beginning the first Monday in June.

The President of the University of Maryland is, by law, Executive Officer of the Board.

A regular meeting of the Board is held the third Friday in each month, except during the months of July and August.

Each school has its own Advisory Board, Council, or Committee composed of the Dean and members of its faculty, which controls the internal affairs of the group it represents.

The University has the following educational organizations:

At Baltimore

The School of Dentistry
 The School of Law
 The School of Medicine
 The School of Nursing
 The School of Pharmacy
 The College of Special and Continuation Studies
 (Baltimore Division)

At College Park

The College of Agriculture
 The College of Arts and Sciences

The College of Business and Public
 Administration

The College of Education
 The Glenn L. Martin College of
 Engineering and Aeronautical
 Sciences
 The College of Home Economics
 The Graduate School
 The College of Military Science
 The College of Physical Education,
 Recreation and Health
 The College of Special and Con-
 tinuation Studies
 The Summer School

ADMINISTRATIVE OFFICERS

SCHOOL OF MEDICINE

Wilson H. Elkins, B.A., M.A., Litt. B., Ph.D.....	<i>President</i>
William S. Stone, M.S., M.D., D.Sc....	<i>Director, Medical Education and Research, and Dean</i>
Edgar F. Long, Ph.D.....	<i>Dean of Students</i>
Norma J. Azlein, A.B.....	<i>Associate Registrar</i>
G. Watson Algire, M.S.....	<i>Director of Admissions and Registrations</i>

SCHOOL *of* MEDICINE

FACULTY OF MEDICINE

EMERITI

H. BOYD WYLIE, M.D.....	Professor of Biochemistry and Dean, Emeritus
HENRY J. WALTON, M.D.....	Professor of Roentgenology, Emeritus
PAGE EDMUNDS, M.D.....	Professor of Traumatic Surgery, Emeritus
RUTH LEE BRISCOE.....	Librarian, Emeritus ⁵
IRVING J. SPEAR, M.D.....	Professor of Neurology, Emeritus
CARL L. DAVIS, M.D.....	Professor of Anatomy, Emeritus
ARTHUR M. SHIPLEY, M.D., D.Sc.....	Professor of Surgery, Emeritus
CLYDE A. CLAPP, M.D.....	Professor of Ophthalmology, Emeritus ^{5a}
ANDREW C. GILLIS, M.A., M.D., D.Sc., LL.D.....	Professor of Neurology, Emeritus
EDGAR B. FRIEDENWALD, M.D.....	Professor of Clinical Pediatrics, Emeritus
CHARLES BAGLEY, JR., M.A., M.D.....	Professor of Neurological Surgery, Emeritus
WAITMAN F. ZINN, M.D.....	Professor of Otolaryngology, Emeritus
F. L. JENNINGS, M.D.....	Professor of Clinical Surgery, Emeritus
THOMAS R. CHAMBERS, A.B., M.D.....	Associate Professor of Surgery, Emeritus
CHARLES W. MAXSON, M.D.....	Associate Professor of Surgery, Emeritus
FRANK W. HACHTEL, M.D.....	Professor of Bacteriology, Emeritus

ADVISORY BOARD OF THE FACULTY

DEAN WILLIAM S. STONE, *Chairman*

WILLIAM R. AMBERSON	ROBERT B. DODD	FRANK D. KALTREIDER
JAMES G. ARNOLD, JR.	WILLIAM C. EBELING, III	JAMES R. KARNs
SAMUEL P. BLESSMAN	C. REID EDWARDS	EDWARD A. KITLOWSKI
ROBERT P. BOUDREAU	MONTÉ EDWARDS	VERNON E. KRAHL
J. EDMUND BRADLEY	FREDERICK P. FERGUSON	JOHN C. KRANTZ, JR.
OTTO C. BRANTIGAN	FRANK H. J. FIGGE	LOUIS A. M. KRAUSE
HOWARD M. BUBERT	JACOB E. FINESINGER	THEODORE F. LEVEQUE
RAYMOND M. BURGISON	A. H. FINKELSTEIN	WILLIAM S. LOVE, JR.
T. NELSON CAREY	RUSSELL S. FISHER	H. PATTERSON MACK
CARL DAME CLARKE	KURT GLASER	HENRY J. L. MARRIOTT
RICHARD G. COBLENTZ	ALBERT E. GOLDSTEIN	ZACHARIAH MORGAN
BEVERLEY C. COMPTON	MAURICE H. GREENHILL	H. WHITMAN NEWELL
EDWARD F. COTTER	PAUL R. HACKETT	THOMAS R. O'ROURK
R. ADAMS COWLEY	ARTHUR LYMAN HASKINS	ROBERT T. PARKER
EDWARD R. DANA	EDWARD J. HERBST	D. J. PESSAGNO
CHARLES N. DAVIDSON	HARRY C. HULL	H. R. PETERS
JOHN DECARLO, JR.	J. MASON HUNDLEY, JR.	MAURICE C. PINCOFFS
JOHN M. DENNIS		

⁵ Died Feb. 22, 1955.

^{5a} Died April 9, 1955.

J. MORRIS REESE	FREDERICK B. SMITH	RAYMOND E. VANDERLINDE
CHARLES A. REIFSCHNEIDER	HUGH R. SPENCER	ALLEN F. VOSHELL
DEXTER L. REIMANN	EDWARD STEERS	JOHN A. WAGNER
HARRY M. ROBINSON, JR.	EDWIN H. STEWART, JR.	C. GARDNER WARNER
MILTON S. SACKS	MATTHEW L. TABACK	JOHN I. WHITE
EMIL G. SCHMIDT	W. HOUSTON TOULSON	WALTER D. WISE
ANDREW G. SMITH	WILLIAM H. TRIPLETT	CHARLES L. WISSEMAN, JR.
DIETRICH C. SMITH	HENRY F. ULLRICH	THEODORE E. WOODWARD
	CHARLES VAN BUSKIRK	GEORGE H. YEAGER

ADVISORY COMMITTEE OF THE FACULTY

WILLIAM R. AMBERSON	JACOB E. FINESINGER	HUGH R. SPENCER
J. EDMUND BRADLEY	J. MASON HUNDLEY	WILLIAM S. STONE, Dean,
JOHN M. DENNIS	JOHN C. KRANTZ, JR.	<i>Chairman</i>
ROBERT B. DODD	MAURICE C. PINCOFFS	CHARLES L. WISSEMAN, JR.
C. REID EDWARDS	EMIL G. SCHMIDT	THEODORE E. WOODWARD

FACULTY OF MEDICINE

PROFESSORS

MYRON SAMSON AISENBERG, Professor of General and Oral Pathology.

D.D.S., University of Maryland, 1922.

WILLIAM RUTHRAUFF AMBERSON, Professor of Physiology and Head of the Department.

Ph.B., Lafayette College, 1915; Ph.D., Princeton University, 1922.

JAMES GIVENS ARNOLD, JR., Professor of Neurological Surgery and Head of the Division.

B.A., University of North Carolina, 1925; M.D., Johns Hopkins University, 1929.

JOSEPH CALTON BIDDIX, Professor of Oral Diagnosis.

D.D.S., University of Maryland, 1934.

J. EDMUND BRADLEY, Professor of Pediatrics and Head of the Department.

B.S., Loyola College, 1928; M.D., Georgetown University, 1932.

OTTO CHARLES BRANTIGAN, Professor of Thoracic Surgery, Clinical Surgery, and Surgical Anatomy.

B.S., Northwestern University, 1931; M.D., Northwestern University, 1934.

T. NELSON CAREY, Professor of Clinical Medicine.

M.D., University of Maryland, 1927.

It is to be noted that for convenience of reference the names of the members of the Faculty are listed in the forepart of this catalogue in alphabetical order. The names are listed in order of seniority under each preclinical and clinical department of the school on subsequent pages.

On the lists of the Faculty of Medicine and Fellows and the Hospital and Dispensary staffs are given the names and positions assigned during the period July 1, 1955 to June 30, 1956 unless otherwise indicated. Changes are noted as follows:

¹ Appointments effective July 1, 1955.

² Promotions effective July 1, 1955.

³ Resignations effective July 1, 1955.

⁴ Retirements.

⁵ Deaths.

⁶ Leave of absence.

*Part time.

- CHARLES JELLEFF CARR, Professor of Pharmacology.³
B.S., University of Maryland, 1933; M.S., 1934; Ph.D., 1937.
- RICHARD GILMORE COBLENTZ, Clinical Professor of Neurological Surgery.
A.B., Johns Hopkins University, 1914; M.D., 1918.
- CHARLES N. DAVIDSON, Professor of Clinical Radiology.
M.D., University of Virginia, 1938.
- JOHN MURRAY DENNIS, Professor of Radiology and Head of the Department, and Assistant Chief, Division of Radioactive Isotopes.
B.S., University of Maryland, 1943; M.D., 1945.
- EDWARD CLARENCE DOBBS, Professor of Pharmacology.
D.D.S., University of Maryland, 1929; B.S., 1952.
- ROBERT BRUCE DODD, Professor of Anesthesiology and Head of the Department.
M.D., University of Nebraska, 1945.
- BRICE MARDEN DORSEY, Professor of Oral Surgery.
D.D.S., Baltimore College of Dental Surgery, University of Maryland, 1927.
- LOUIS HARRIMAN DOUGLASS, Professor of Obstetrics and Head of the Department.³
M.D., University of Maryland, 1911.
- CHARLES REID EDWARDS, Professor of Surgery and Acting Head of the Department.³
M.D., University of Maryland, 1913.
- MONTE EDWARDS, Professor of Proctology and Clinical Professor of Surgery.
M.R.C.S. (England), L.R.C.P. (London), St. Thomas's Hospital Medical School, 1917.
- FRANK HENRY JOHN FIGGE, Professor of Anatomy and Head of the Department.²
A.B., Colorado College, 1927; Ph.D., University of Maryland, 1934.
- JACOB ELLIS FINESINGER, Professor of Psychiatry and Head of the Department.
B.A., Johns Hopkins University, 1923; M.A., 1925; M.D., 1929.
- RUSSELL S. FISHER, Professor of Legal Medicine and Chief, Division of Legal Medicine.
B.S., Georgia School of Technology, 1937; M.D., Medical College of Virginia, 1942.
- GRASON WILBUR GAVER, Professor of Dental Prosthetics.
D.D.S., University of Maryland, 1922.
- MURICE H. GREENHILL, Professor of Psychiatry.
A.B., University of Rochester, 1931; M.D., University of Chicago, 1936.
- ARTHUR LYMAN HASKINS, Professor of Obstetrics and Head of the Department.
A.B., University of Rochester, 1938; M.D., 1948.
- HARRY CLAY HULL, Professor of Clinical Surgery.
M.D., University of Maryland, 1932.
- JOHN MASON HUNDLEY, JR., Professor of Gynecology and Head of the Department.
B.A., St. Johns College, 1912; M.A., 1913; M.D., Johns Hopkins University, 1916.
- C. LORING JOSLIN, Professor of Pediatrics.
M.D., University of Maryland, 1912.
- EDWARD ANDREW KITLOWSKI, Clinical Professor of Plastic Surgery.
B.S., Bucknell University, 1917; M.D., Johns Hopkins University, 1921.
- JOHN CHRISTIAN KRANTZ, JR., Professor of Pharmacology and Head of the Department.
B.S., University of Maryland, 1923; M.S., 1924; Ph.D., 1928.
- LOUIS A. M. KRAUSE, Professor of Clinical Medicine.
M.D., University of Maryland, 1917.
- KENNETH DARTMOUTH LEGGE, Professor of Clinical Urology.
M.D., University of Maryland, 1917.
- WILLIAM SAMUEL LOVE, Professor of Clinical Medicine and Head of the Division of Cardiology.
A.B., Johns Hopkins University, 1918; M.D., University of Maryland, 1923.
- THEODORE H. MORRISON, Clinical Professor of Gastro-Enterology.
M.D., College of Physicians & Surgeons, 1915.

- WALLE J. H. NAUTA, Professor of Anatomy.¹
M.D., University of Utrecht, 1942; Ph.D., 1945.
- ALFRED T. NELSON, Clinical Professor of Anesthesiology.
M.D., University of Maryland, 1943.
- JAMES WHARTON NELSON, Professor of Clinical Surgery.
A.B., St. Johns College, 1918; M.D., University of Maryland, 1925.
- ERNEST BRODEY NUTTALL, Professor of Fixed Partial Prosthesis.
D.D.S., University of Maryland, 1931.
- THOMAS R. O'ROURK, Professor of Otolaryngology and Head of the Division.
M.D., University of Maryland, 1921.
- DANIEL JAMES PESSAGNO, Professor of Clinical Surgery.
B.A., Rock Hill College, 1916; M.D., University of Maryland, 1920.
- H. RAYMOND PETERS, Professor of Clinical Medicine.
B.A., Loyola College, 1918; M.D., University of Maryland, 1922.
- MAURICE CHARLES PINCOFFS, Professor and Head of the Department of Preventive Medicine and Rehabilitation.
B.S., University of Chicago, 1910; M.D., Johns Hopkins University School of Medicine, 1912.
- KYRYLE W. PREIS, Professor of Orthodontics.
D.D.S., University of Maryland, 1929.
- KENNETH V. RANDOLPH, Professor of Operative Dentistry.
B.S., University of Maryland, 1939; D.D.S., 1951.
- CHARLES A. REIFSCHNEIDER, Clinical Professor of Traumatic Surgery.
M.D., University of Maryland, 1916.
- JOHN ROBERT REID, Professor of Philosophy in Psychiatry.
Ph.D., University of California, 1936.
- HARRY M. ROBINSON, JR., Professor of Dermatology and Chief, Division of Dermatology.
B.S., University of Maryland, 1931; M.D., 1935.
- HARRY L. ROGERS, Clinical Professor of Orthopaedic Surgery.
M.D., University of Maryland, 1915.
- MILTON S. SACKS, Professor of Clinical Medicine and Chief, Division of Clinical Pathology.
B.S., University of Maryland, 1932; M.D., 1934.
- EMIL G. SCHMIDT, Professor of Biological Chemistry and Head of the Department.
B.S., University of Wisconsin, 1921; M.S., 1923; Ph.D., 1924.
- DIETRICH CONRAD SMITH, Professor of Physiology, Assistant Director Post-graduate Committee.
B.A., University of Minnesota, 1923; M.A., 1924; Ph.D., Harvard University, 1928.
- HUGH RAYMOND SPENCER, Professor of Pathology and Head of the Department.
M.D., Baltimore Medical College, 1910.
- WILLIAM HOUSTON TOULSON, Professor of Urology and Head of the Division.
B.A., Washington College, 1908; M.Sc., Washington College, 1911; M.D., University of Maryland, 1913.
- I. RIDGEWAY TRIMBLE, Professor of Clinical Surgery.
B.A., Princeton University, 1922; M.D., Johns Hopkins University School of Medicine, 1926.
- EDUARD (CARL ADOLF) UHLENHUTH, Professor of Anatomy and Head of the Department;³ Research Professor of Anatomy.¹
Ph.D., University of Vienna, 1909.
- CHARLES VAN BUSKIRK, Professor of Neurology and Chief, Division of Neurology.
B.A., Westminster College, 1939; M.S., St. Louis University, 1941; Ph.D., University of Minnesota, 1943;
M.D., Albany Medical College, 1947; M.S., University of Minnesota, 1953.
- ALLEN FISKE VOSHELL, Professor of Orthopaedic Surgery.
B.A., Johns Hopkins University, 1915; M.D., 1919.
- HUNTINGTON WILLIAMS, Professor of Hygiene and Public Health.
A.B., Harvard College, 1915; M.D., Johns Hopkins University, 1919; Dr.P.H., 1921.
- WALTER DENT WISE, Professor of Surgery.³
M.D., College of Physicians and Surgeons, 1906.

CHARLES LOUIS WISSEMAN, JR., Professor of Microbiology and Head of the Department.

B.S., Southern Methodist University, 1941; M.S., Kansas State College, 1943; M.D., Southwestern Medical School, 1946.

THEODORE E. WOODWARD, Professor of Medicine and Head of the Department.

B.S., Franklin and Marshall College, 1934; M.D., University of Maryland, 1938; D.Sc. (Hon.) Western Maryland College, 1950; D.Sc. (Hon.) Franklin and Marshall College, 1954.

GEORGE HERSCHEL YEAGER, Professor of Clinical Surgery and Director of Clinical Research.

B.S., University of West Virginia, 1927; M.D., University of Maryland, 1929.

ASSOCIATE PROFESSORS

MARIE AMELIA ANDERSCH, Associate Professor of Biochemistry in Medicine.

B.S., University of Illinois, 1926; M.S., State University of Iowa, 1932; Ph.D., State University of Iowa, 1934.

MERLE ANSBERRY, Associate Professor of Speech and Director, Speech Clinic (On leave 1954-55)

A.B., University of California, 1929; M.A., 1931; Ph.D., University of Wisconsin, 1937.

SAMUEL P. BESSMAN, Associate Professor of Pediatrics.

M.D., Washington University School of Medicine, 1944.

HOWARD MATHESON BUBERT, Associate Professor of Medicine.

M.D., University of Maryland, 1920.

CARL DAME CLARKE, Associate Professor of Art as Applied to Medicine.

ERNEST IVON CORNBROOKS, JR., Associate Professor of Gynecology.

B.A., St. John's College, 1931; M.D., University of Maryland, 1935.

EDWARD F. COTTER, Associate Professor of Medicine, Associate in Neurology.

M.D., University of Maryland, 1935.

ROSS DAVIES, Associate Professor of Hygiene and Public Health.

M.D.C.M., Dalhousie University, 1924; M.P.H., Johns Hopkins University, 1938.

JOHN SHELDON EASTLAND, Associate Professor of Medicine.

A.B., Johns Hopkins University, 1921; M.D., University of Maryland, 1925.

FRANCIS A. ELLIS, Associate Professor of Dermatology.

B.A., Johns Hopkins University, 1921; M.D., University of Maryland, 1925.

ABRAHAM HARRY FINKELSTEIN, Associate Professor of Pediatrics.

M.D., University of Maryland, 1927.

FREDERICK PALMER FERGUSON, Associate Professor of Physiology.

B.A., Wesleyan University, 1938; M.A., 1939; Ph.D., University of Minnesota, 1943.

SAMUEL LOUIS FOX, Associate Professor in Otolaryngology and Instructor in Physiology.

Ph.G., University of Maryland, 1934; B.S., 1936; M.D., 1938.

WILLIAM LYNNEWOOD GARLICK, Associate Professor of Thoracic Surgery, Associate in Surgery.

A.B., Emory University, 1933; M.D., George Washington University School of Medicine, 1937.

MOSES GELLMAN, Associate Professor of Orthopaedic Surgery.

B.S., University of Richmond, 1917; M.D., Johns Hopkins University, 1921.

ROBERT GORDON GRENELL, Associate Professor of Psychiatry.

B.A., College of the City of New York, 1935; M.Sc., New York University, 1936; Ph.D., University of Minnesota, 1943.

LEWIS PERKINS GUNDRY, Associate Professor of Medicine.

B.A., Johns Hopkins University, 1924; M.D., University of Maryland, 1928.

MANFRED S. GUTTMACHER, Associate Clinical Professor of Psychiatry.

A.B., Johns Hopkins University, 1919; M.D., 1923.

PAUL RAYMOND HACKETT, Associate Professor of Anesthesiology.

B.A., Denison University, 1945; M.D., Western Reserve University, 1949.

OLIVER GLENN HARNE, Associate Professor of Anatomy and Assistant to the Dean.³

- EDWARD JOHN HERBST, Associate Professor of Biological Chemistry.
B.S., University of Wisconsin, 1943; M.S., 1944; Ph.D., 1949.
- CYRUS FLOOK HORINE, Associate Professor of Surgery.
M.D., University of Maryland, 1919.
- ALBERT JAFFE, Associate Clinical Professor of Pediatrics.
M.D., University of Maryland, 1921.
- EDWARD SOOY JOHNSON, Associate Professor of Surgery.
M.D., University of Maryland, 1912.
- D. FRANK KALTREIDER, Associate Professor of Obstetrics.
A.B., Johns Hopkins University, 1933; M.D., University of Maryland, 1937.
- FAYNE A. KAYSER, Associate Professor of Otolaryngology.
B.S., University of West Virginia, 1925; M.D., University of Maryland, 1927.
- VERNON E. KRAHL, Associate Professor of Anatomy.
B.S., University of Pittsburgh, 1939; M.S., 1940; Ph.D., University of Maryland, 1946.
- FREDERICK T. KYPER, Associate Professor of Otolaryngology.
M.D., University of Maryland, School of Medicine, 1923.
- HARRY VERNON LANGEUTTING, Associate Professor of Medicine.
A.B., Johns Hopkins University, 1927; M.D., University of Maryland, 1931.
- EPHRAIM THEODORE LISANSKY, Associate Professor in Medicine, Associate in Psychiatry.
B.A., Johns Hopkins University, 1933; M.D. University of Maryland, 1937.
- FLORENCE I. MAOHONEY, Associate Professor of Physical Medicine.¹
B.S., University of Wisconsin, 1927; M.S., 1930; M.D., Womens Medical College, 1937.
- HENRY JOSEPH LLEWELLYN MARRIOTT, Associate Professor of Medicine and Chief, Division of Physical Diagnosis.
B.A., Oxford University, 1941; M.A., 1943; B.M., B.Ch., 1944.
- WALTER C. MERKEL, Associate Professor of Pathology.
B.A., Dickinson College, 1922; M.D., University of Maryland, 1926.
- GEORGE S. MIRICK, Associate Professor of Medicine.
A.B., Princeton University, 1931; M.D., Johns Hopkins University, 1935.
- SAMUEL MORRISON, Associate Professor of Medicine and Gastro-enterology.
B.A., Johns Hopkins University, 1925; M.D., Johns Hopkins Medical School, 1929.
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 M.D., University of Maryland, 1950.
- T. J. TOUHEY, Assistant in Surgery.
 M.D., University of Maryland, 1923.
- CHARLES S. WARD, JR., Assistant in Psychiatry.
 A.B., Emory University, 1934; M.D., Emory University School of Medicine, 1938.
- ROGER SHERMAN WATERMAN, Assistant in Psychiatry.
 B.S., Bethany College, 1947; M.D., University of Maryland, 1948.
- THOMAS CLYDE WEBSTER, Assistant in Obstetrics.
 B.S., University of Maryland, 1938; M.D., 1943.
- WILLIAM EARL WEEKS, Assistant in Pediatrics.
 B.S., Wake Forest College, 1937; M.D., University of Maryland, 1940.
- JACK WEXLER, Assistant in Medicine.
 ‡ B.A., West Virginia University, 1935; M.D., Medical College of Virginia, 1939.
- J. CARLTON WICH, Assistant in Pediatrics.
 B.S., University of Maryland, 1938; M.D., 1943.
- THOMAS L. WORSLEY, JR., Assistant in Medicine.
 B.S., University of North Carolina, 1937; M.D., University of Maryland, 1939.
- JACOB ZIMMERMAN, Assistant in Surgery.
 M.D., St. Bartholomew's Medical School, London, England, 1943.

RESEARCH ASSOCIATES

- Raymond I. Band, M.D., Research Associat. In Psychiatry.
- Grace L. Finesinger, Research Associate in Psychiatry.¹
- Moritz Michaelis, Ph.D., Army Chemical Center Research Associate in Psychiatry.
- Harvey A. Robinson, Ph.D., Research Associate in Psychiatry.
- Melly Simon, Research Associate in Psychiatry.

FELLOWS

- John M. Allen, B.S., M.D., Fellow in Surgery.
- Tanash H. Atoynatan, M.D., Fellow in Psychiatry.
- Nicholas Bachur, Tobacco Industry Research Fellow.
- Charles Bagley III, B.S., M.D., Fellow in Psychiatry.
- Brigitte E. Blankenhorn, B.A., Research Fellow in Physiology.

William C. Cohen, Summer Fellow in Microbiology.
 Henrique B. deMoraes, Fellow in Plastic Surgery.
 Jane Wray Forrest, Fellow in Pharmacology.
 Richard L. Glasser, A.B., John F. B. Weaver Fellow in Physiology.
 Donald Helinski, B.S., Weaver Fellow in Biological Chemistry.
 John D. Hensala, Fellow in Pharmacology.
 Ernest C. Herrmann, Jr., B.S., Fellow in Bacteriology.
 Albert V. Kanner, Fellow in Pediatrics.
 Murray M. Kappelman, B.S., Fellow in Pediatrics.
 Theodore Kardash, B.S., M.D., Research Fellow in Gynecological Pathology.
 Sydney Katz, A.B., M.D., Research Fellow in Legal Medicine.¹
 Donald Keister, B.S., Fellow in Biological Chemistry.
 Norma May Keigler, B.S., Bressler Reserve Fund Research Fellow in Microbiology.
 Norman W. Lavy, A.B., Summer Fellow in Clinical Pathology.
 Santiago Lombano, M.D., Fellow in Thoracic Surgery.
 Jack Mendelson, Fellow in Psychiatry.³
 Sherwood Miller, B.S., M.D., Fellow in Medicine.
 Robert G. Muth, Lederle Student Fellow, Div. of Cardiology.
 William E. O'Malley, B.S., Fellow in Pharmacology.¹
 Marvin S. Platt, Summer Fellow in Pediatrics.
 Giovanni Raccuglia, M.D., Anna Corman Fellow in Hematology.
 Joan Raskin, Fellow in Pediatrics.
 Aubrey D. Richardson, M.D., Fellow in Medicine (part-time).
 Emily M. Rody, Fellow in Psychiatry.
 Charles A. Sanislow, Jr., Summer Fellow in Clinical Pathology.
 George Schimert, B.S., M.D., Fellow in Cardiovascular and Experimental Surgery.
 John O. Sharrett, M.D., Fellow in Neuropathology.
 Joseph E. Shuman, Fellow in Infectious Diseases.
 George T. Smith, Lederle Medical Student Fellow, Div. of Cardiology.
 George A. Sowell, Summer Fellow in Radiology.
 Thomas A. Stebbins, A.B., Medical Illustrator in Oncology and Gynecology. P.H.S.
 Cancer Teaching Program.
 Joseph R. Suriano, Fellow in Microbiology.
 Kyle W. Swisher, Jr., M.D., Fellow in Medicine (part-time).
 Andre J. Toussant, B.S., Fellow in Microbiology.
 Robert T. Walker, M.D., Fellow in Medicine.
 Robert H. Weaver, B.S., Fellow in Biochemistry.
 Charles Wheeler, A.B., M.D., Research Fellow in Legal Medicine.¹
 Henry F. Wilson, Jr., B.S., Fellow in Pharmacology.
 Arthur Wolpert, Fellow in Pharmacology.
 Robert C. Wood, B.A., M.S., U. S. Navy Research Fellow in Microbiology.

CONSULTANTS

Robert W. Swain, B.S., Consultant in Radiologic Physics.
 Gordon Leslie Lippitt, B.S., M.A., M.D., Consultant in Psychiatry.
 Isadore Tuerk, M.D., Consultant in Psychiatry.

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Dorothy Doe Adams, A.B., Research Assistant in Psychiatry.
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 Arlie Biemiller, A.B., Research Assistant in Biological Chemistry.

Bernard D. Blaustein, B.S., M.A., Research Assistant in Legal Medicine.
 Abraham B. Brody, A.B., A.M., Ph.D., Research Assistant in Psychiatry.
 Florence M. Burnett, B.S., M.S., R.N., Research Assistant in Psychiatry.
 Flo Mohr Council, A.B., Research Assistant in Biological Chemistry.
 Fred Davis, M.A., Research Assistant in Psychiatry.
 Dorothy De Santis, Research Assistant in Medicine.
 Ethel M. Ebersberger, A.B., Research Assistant in **Anatomy**.
 Jorge A. Franco, Research Assistant in Medicine.
 Ella Freytag, Research Assistant in Legal Medicine.
 Joseph J. Geller, M.D., Research Assistant in Psychiatry.
 Eleanor G. B. Glinos, A.B., Research Assistant in Biological Chemistry.
 William L. Heimer, M.D., Research Assistant in Pediatrics.
 Claire K. Heisse, A.B., Research Assistant in Pharmacology.
 Betty I. Ives, Research Assistant in Pediatrics.
 Joan W. Little, A.B., Research Assistant in Gastro-Enterology.
 June H. Mendelson, B.S., Research Assistant in Psychiatry.³
 M. Joanne Mitchell, Research Assistant in Radioactive Isopes.
 Norma J. Nonken, B.S., Research Assistant in Psychiatry.
 M. Joseph **Rehak**, A.B., Research Assistant in Pharmacology.¹
 Evelyn C. Rice, Research Assistant in Obstetrics and Medicine.¹
 Danial S. Sax, Research Assistant in Psychiatry.
 Elizabeth R. L. Shaw, B.S., Research Assistant in Biological Chemistry.
 Robert Shirey, B.S., Research Assistant in Pediatrics.¹
 Arthur B. Silverstein, A.B., A.M., Research Assistant in Psychiatry.
 Karl E. Sussman, A.B., Research Assistant in Physiology.
 Toba Tahl, Research Assistant in Psychiatry.
 Floris de Balbian Verster, B.S., M.S., Research Assistant in Psychiatry.
 Amy Lee Wells, R.N., Research Assistant in Gynecological Pathology.
 Stanley N. Yaffe, B.S., M.D., Research Assistant in Dermatology.
 Karl H. Weaver, M.D., Trainee in Cardiology.
 Betty May Zimmerman, Research Assistant in Legal Medicine.

TRAINEES

Aubry D. Richardson, M.D., Trainee in Cardiology.

UNIVERSITY HOSPITAL

CLIFFORD G. BLITCH, *Director*
 KURT H. NORK, *Asst. Director*
 ALBERT G. WNUK, *Asst. Director*

MEDICAL BOARD OF THE STAFF

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 JACOB E. FINESINGER

ARTHUR L. HASKINS
 J. MASON HUNDLEY, JR.
 MAURICE C. PINCOFFS
 HUGH R. SPENCER
 THEODORE E. WOODWARD

<i>Elected Members</i>	<i>Term Expires</i>
THURSTON R. ADAMS.....	1956
C. EDWARD LEACH.....	1956
JOHN D. YOUNG.....	1956
THOMAS R. O'ROURK.....	1956
WM. CARL EBELING, III.....	1957
HARRY M. ROBINSON, JR.....	1957
E. RODERICK SHIPLEY.....	1957
WILLIAM S. STONE, <i>Director, Medical Education and Research;</i> <i>Dean, School of Medicine</i>	} <i>Ex officio members</i>
CLIFFORD G. BLITCH, <i>Director, University Hospital</i>	
KURT H. NORK, <i>Asst. Director, University Hospital</i>	
ALBERT G. WNUK, <i>Director, Out Patient Department</i>	
MILTON S. SACKS, <i>Director, Clinical Pathology</i>	

UNIVERSITY HOSPITAL STAFF

ANESTHESIOLOGY

<i>Anesthesiologist-in-Chief</i>	ROBERT B. DODD
<i>Anesthesiologists</i>	{ LEONARD J. ABRAMOWITZ PAUL R. HACKETT ALFRED T. NELSON OTTO C. PHILLIPS

GYNECOLOGY AND ONCOLOGY

<i>Gynecologist-in-Chief</i>	J. MASON HUNDLEY, JR.
<i>Gynecologists</i>	{ LEO BRADY BEVERLY C. COMPTON ERNEST I. CORNBROOKS, JR. WILLIAM K. DIEHL EVERETT S. DIGGS

ONCOLOGY

<i>Oncologist-in-Chief</i>	J. MASON HUNDLEY, JR.
----------------------------------	-----------------------

MEDICINE AND MEDICAL SPECIALTIES

DERMATOLOGY

<i>Dermatologist-in-Chief</i>	HARRY M. ROBINSON, JR.
<i>Dermatologists</i>	{ EUGENE S. BERESTON FRANCIS A. ELLIS RAYMOND C. V. ROBINSON A. ALBERT SHAPIRO ISRAEL ZELIGMAN

GENERAL MEDICINE

<i>Physician-in-Chief</i>	THEODORE E. WOODWARD
<i>Physicians</i>	{ ROBERT E. BAUER ⁶ HOWARD M. BUBERT T. NELSON CAREY EDWARD F. COTTER WM. CARL EBELING, III FRANK J. GERAGHTY LEWIS P. GUNDRY JAMES R. KARNS LOUIS A. M. KRAUSE

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

	{	H. VERNON LANGELOTTIG
	{	JOHN E. LEGGE
	{	EPHRAIM T. LISANSKY
	{	WILLIAM S. LOVE, JR.
	{	HENRY J. L. MARRIOTT
	{	SAMUEL MORRISON
	{	ROBERT T. PARKER
<i>Physicians</i>	{	MAURICE C. PINCOFFS
	{	SAMUEL T. R. REVELL, JR.
	{	MILTON S. SACKS
	{	LEONARD SCHERLIS
	{	SIDNEY SCHERLIS
	{	LAWRENCE SERRA
	{	WILFRED H. TOWNSHEND, JR.
	{	CHARLES VAN BUSKIRK
	{	JOSEPH B. WORKMAN
NEUROLOGY		
<i>Neurologist-in-Chief</i>		CHARLES VAN BUSKIRK
	{	EDWARD F. COTTER
<i>Neurologists</i>	{	WILLIAM L. FEARING
	{	GEORGE G. MERRILL
	{	IRVING J. SPEAR
OBSTETRICS		
<i>Obstetrician-in-Chief</i>		ARTHUR L. HASKINS
	{	GEORGE H. DAVIS
	{	D. MCCLELLAND DIXON
	{	LOUIS C. GAREIS
<i>Obstetricians</i>	{	HUGH B. McNALLY
	{	J. HUFF MORRISON
	{	J. MORRIS REESE
	{	JOHN E. SAVAGE
	{	J. KING B. E. SEEGAR
	{	ISADORE A. SIEGEL
OPHTHALMOLOGY		
<i>Ophthalmologist-in-Chief</i>		
<i>Ophthalmologists</i>		RUBY A. SMITH
	{	J. E. BRUMBACK, JR.
<i>Assistant Ophthalmologists</i>	{	JOHN C. OZAZEWSKI
	{	HENRY B. WILSON
PATHOLOGY		
<i>Pathologist-in-Chief</i>		HUGH R. SPENCER
<i>Pathologists</i>	{	DEXTER L. REIMANN
	{	JOHN A. WAGNER
PEDIATRICS		
<i>Pediatrician-in-Chief</i>		J. EDMUND BRADLEY
	{	SAMUEL P. BESSMAN
<i>Pediatricians</i>	{	RAYMOND L. CLEMMENS
	{	A. H. FINKELSTEIN
	{	C. LORING JOSLIN

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

PREVENTIVE MEDICINE AND REHABILITATION

Physician-in-Chief..... MAURICE C. PINCOFFS

PSYCHIATRY

Psychiatrist-in-Chief..... JACOB E. FINESINGER

{ TANASH ATOYNATAN
 RAYMOND I. BAND
 KLAUS BERBLINGER
 JOSEPH BIERMAN
 LIDA C. BROWN
 ENOCH CALLAWAY, III
 WILLIAM N. FITZPATRICK
 BERNARD S. GORDON
 MAURICE H. GREENHILL
 MANFRED S. GUTTMACHER
 VIRGINIA HUFFER
 MARVIN JAFFE
 EPHRAIM T. LISANSKY
 WILLIAM W. MAGRUDER
 MARION W. MATHEWS
 CESAR MEZA
 H. WHITMAN NEWELL
 SAMUEL NOVEY
 KENT E. ROBINSON
 NATHAN SCHNAPER
 ISADORE TUEK
 CHARLES S. WARD
 ROGER S. WATERMAN
 BETSY WOOTEN

Psychiatrists.....

RADIOLOGY

Radiologist-in-Chief..... JOHN M. DENNIS

{ ROBERT P. BOUDREAU
 CHARLES N. DAVIDSON
 HENRY H. STARTZMAN

Radiologists.....

SURGERY AND SURGICAL SPECIALTIES

BRONCHOSCOPY

{ RICHARD J. CROSS
 JOHN H. HIRSCHFELD
 FREDERICK T. KYPER
 THOMAS D. MICHAEL⁶

Bronchoscopists.....

DENTAL SURGERY

Dental Surgeon-in-Chief..... BRICE M. DORSEY

{ MYRON S. AISENBERG
 JOSEPH C. BIDDIX
 JOSEPH P. CAPPUCCIO
 EDWARD C. DOBBS
 GRAYSON W. GAVER
 CONRAD L. INMAN
 ERNEST B. NUTTALL
 KENNETH V. RANDOLPH
 WILBUR O. RAMSEY

Dentists.....

UNIVERSITY HOSPITAL STAFF—*Cont'd.*

GENERAL SURGERY

<i>Surgeon-in-Chief</i>	ROBERT W. BUXTON
	{ THURSTON R. ADAMS
	{ HARRY C. BOWIE
	{ OTTO C. BRANTIGAN
	{ R. ADAMS COWLEY
	{ RAYMOND M. CUNNINGHAM
	{ HARRY C. HULL
<i>Surgeons</i>	{ CHARLES A. REIFSCHNEIDER
	{ WILLIAM B. SETTLE
	{ ROBERT C. SHEPPARD
	{ E. RODERICK SHIPLEY
	{ EDWIN H. STEWART
	{ DAVID R. WILL
	{ GEORGE H. YEAGER

NEUROLOGICAL SURGERY

<i>Neurological Surgeon-in-Chief</i>	JAMES G. ARNOLD, JR.
<i>Neurological Surgeons</i>	{ RICHARD G. COBLENTZ
	{ RAYMOND K. THOMPSON

ORTHOPEDICS

<i>Orthopedic Surgeon-in-Chief</i>	ALLEN F. VOSHELL
	{ MOSES GELLMAN
<i>Orthopedic Surgeons</i>	{ JAMES P. MILLER
	{ HENRY F. ULLRICH
	{ MILTON J. WILDER

OTOLARYNGOLOGY

<i>Otolaryngologist-in-Chief</i>	THOMAS R. O'ROURK
--	-------------------

PROCTOLOGY

<i>Proctologist-in-Chief</i>	MONTE EDWARDS
<i>Proctologist</i>	THURSTON R. ADAMS

UROLOGY

<i>Urologist-in-Chief</i>	JOHN D. YOUNG
	{ JOHN F. HOGAN, JR.
	{ HOWARD B. MAYS
<i>Urologists</i>	{ LYLE L. MILLAN
	{ MARTIN A. ROBBINS
	{ IRVING SCHERLIS
	{ JOHN D. YOUNG

UNIVERSITY HOSPITAL RESIDENT AND INTERN STAFF

July 1, 1955 to June 30, 1956

CHARLES B. ADAMS, B.S., M.D., *Assistant Resident in Medicine*
 BENJAMIN A. ADELSTEIN, B.A., M.D., *Assistant Resident in Surgery*
 CHARLES BAGLEY, III, B.S., M.D., *Resident in Psychiatry*
 HERBERT S. BELL, M.D., *Assistant Resident in Neurosurgery*
 EMIDIO A. BIANCO, M.D., *Assistant Resident in Medicine: University Hospital, July 1,*

1955 to December 31, 1955; Veterans Administration Hospital, Loch Raven Boulevard, January 1, 1956 to June 30, 1956

- EUGENE BLANK, B.A., M.D., *Assistant Resident in Medicine and Pediatrics*
 CHARLES W. BRADY, A.B., M.D., *Assistant Resident in Surgery*
 RICHARD J. BROWN, B.S., M.D., *Resident in Anesthesiology*
 BASRI BULUT, M.D., *Resident in Otolaryngology*
 CELESTINO CASILLAS, M.D., *Assistant Resident in Psychiatry*
 JOHN B. CODINGTON, B.S., M.D., *Assistant Resident in Surgery*
 JEAN M. COYLE, B.S., M.D., *Assistant Resident in Psychiatry*
 NESTOR F. DE VENECIA, M.D., *Assistant Resident in Surgery*
 ROCHA FILHO, M.D., *Assistant Resident in Psychiatry*
 CHARLES T. FITCH, B.S., *Assistant Resident in General Practice*
 JOSEPH C. FITZGERALD, B.A., M.D., *Assistant Resident in Maine*
 MARIA PAZ FLOR, D.D.M., *Dental Resident*
 LOUIS A. FRITZ, B.S., M.D., *Resident in Anesthesiology*
 ALFREDO H. GAGNETEN, M.D., *Assistant Resident in Obstetrics and Gynecology*
 JAMES P. GALLAHER, A.B., M.D., *Resident in Obstetrics*
 F. SIDNEY GARDNER, JR., B.A., *Resident in Gynecology*
 ROBERT W. GIBBES, B.S., M.D., *Assistant Resident in Pediatrics*
 ROBERT B. GOLDSTEIN, M.D., *Assistant Resident in Surgery*
 BELA HATFALVI, M.D., *Resident in Anesthesiology*¹
 WILLIAM H. HATFIELD, B.A., M.D., *Assistant Resident in Pediatrics*
 THOMAS E. HUNT, JR., B.A., M.D., *Assistant Resident in Surgery*
 HOLCOMBE H. HUNT, JR., B.S., M.D., *Assistant Resident in Medicine*
 MARCIA M. KELLER, B.S., M.D., *Assistant Resident in Medicine*
 EDWARD S. KLOHR, JR., M.D., *Assistant Resident in Anesthesiology*
 HENRY E. LANGENFELDER, B.A., M.D., *Resident in Surgery*
 PAUL V. LEGER, M.D., *Assistant Resident in Surgery*
 DAVID A. LEVY, B.S., M.D., *Assistant Resident in Medicine*
 FRANCES LITRENTA, A.B., M.D., *Assistant Resident in Psychiatry*
 RAFAEL LONGO-CORDERO, B.S., M.D., *Assistant Resident in Neurosurgery*: Four months rotating at University Hospital, Mercy Hospital and Baltimore City Hospitals; University Hospital, November 1, 1955 to February 28, 1956
 JOHN W. LOOPER, JR., M.D., *Resident in Pediatrics*
 ALFREDO MATEOS, B.S., M.D., *Assistant Resident in Psychiatry*
 RAUL MERCADO, JR., A.B., M.D., *Resident in Radiology*
 EDMUND B. MIDDLETON, M.D., *Assistant Resident in Obstetrics and Gynecology*
 NORMAN E. MILLER, M.D., *Assistant Resident in Obstetrics and Gynecology*
 MILTON F. MILLER, B.A., M.D., *Assistant Resident in Medicine*
 ROBERT A. MOORE, JR., A.B., M.D., *Assistant Resident in Neurosurgery*: Four months rotating at University Hospital, Mercy Hospital and Baltimore City Hospitals; University Hospital, March 1, 1956 to June 30, 1956
 ROBERT S. MOSSER, B.S., M.D., *Assistant Resident in Pediatrics*
 SADREDIN MUSAVI, A.B., M.D., *Assistant Resident in Surgery*
 GERALD F. NANGLE, B.A., M.D., *Assistant Resident in General Practice*
 BURDETTE A. NEWTON, A.B., M.D., *Assistant Resident in Medicine*
 EDWARD D. NIESSEN, B.A., M.D., *Assistant Resident in Obstetrics and Gynecology*
 A. GIBSON PACKARD, JR., A.B., M.D., *Assistant Resident in Surgery*
 ALFONSO PAREDES, B.S., M.D., *Assistant Resident in Psychiatry*

¹ Until December 31, 1955.

- DAVID H. PATTEN, A.B., M.D., *Assistant Resident in Medicine: Veterans Administration Hospital, Fort Howard, July 1, 1955 to December 31, 1955; University Hospital, January 1, 1955 to June 30, 1955*
- CHARLES G. PEAGLER, M.D., *Assistant Resident in Surgery*
- GEORGE C. PECK, A.B., M.D., *Assistant Resident in Surgery*
- HENRY D. PERRY, JR., A.B., M.D., *Assistant Resident in Obstetrics and Gynecology*
- JACK RAHER, B.A., M.D., *Assistant Resident in Psychiatry*
- ADALBERT F. SCHUBART, M.D., *Assistant Resident in Medicine*
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- EDWARD J. SHEFFMAN, M.D., *Assistant Resident in Anesthesiology*
- EUGENE SHERMAN, B.S., M.D., *Assistant Resident in Obstetrics and Gynecology*
- CHARLES E. SIMONS, JR., M.D., *Resident in Urology*
- ROBERT T. SINGLETON, B.S., M.D., *Assistant Resident in Medicine: Veterans Administration Hospital, Loch Raven Boulevard, July 1, 1955 to December 31, 1955; University Hospital, January 1, 1956 to June 30, 1956*
- WILLIAM H. SLASMAN, JR., A.B., M.D., *Assistant Resident in Neurosurgery: Four months rotating at University Hospital, Mercy Hospital and Baltimore City Hospitals; University Hospital, July 1, 1955 to October 31, 1955*
- RALPH J. SLONIM, JR., B.A., M.D., *Assistant Resident in Medicine*
- DOUGLAS H. SMITH, B.A., M.D., *Resident in Anesthesiology*
- WILLIAM S. SPICER, M.D., *Resident in Medicine*
- WILLIAM B. STODGHILL, A.B., M.D., *Assistant Resident in Medicine*
- THOMAS H. STRONG, M.D., *Assistant Resident in Obstetrics and Gynecology*
- LILBURN T. TALLEY, B.S., M.D., *Assistant Resident in Radiology*
- RUFUS THAMES, B.S., M.D., *Assistant Resident in Obstetrics and Gynecology*
- BATE C. TOMS, JR., B.S., M.D., *Resident in Surgery*
- ROBERT TRATTNER, D.D.S., M.D., *Resident in Psychiatry*
- ARNOLD L. VANCE, B.S., M.D., *Assistant Resident in Pediatrics*
- PAUL VAN LITH, M.D., *Assistant Resident in Medicine²*
- HAROLD R. WEISS, B.S., M.D., *Assistant Resident in Surgery*
- ALBERT S. WINER, A.B., M.D., *Assistant Resident in Psychiatry*
- FRANCIS E. WINSLOW, JR., A.B., *Assistant Resident in Pediatrics*
- DONALD A. WOLFE, B.S., M.D., *Assistant Resident in Radiology*
- ROBERT E. YIM, B.S., M.D., *Assistant Resident in Medicine and Pediatrics*
- JACOB ZIMMERMAN, M.B., B.S., *Resident in Thoracic Surgery*

ROTATING INTERNS

- | | |
|--|-----------------------------------|
| HASKELL H. BASS, JR., M.D. | MORTON D. KRAMER, B.S., M.D. |
| EUGENIO E. BENITEZ, B.S., M.D. | WILLIAM F. KRONE, JR., B.A., M.D. |
| ALBERT B. BRADLEY, A.B., M.D. | NORMAN W. LAVY, B.A., M.D. |
| EDUARDO CESARMAN VITIS, B.S., M.D. | RICHARD F. LEIGHTON, A.B., M.D. |
| GEORGE P. FOSMIRE, A.B., M.D. | DOROTHY E. MILLON, B.A., M.D. |
| JOHN R. GAULD, B.S., M.D. | NEIL NOVIN, B.A., M.D. |
| GEORGE E. GIFFORD, JR., B.S., M.D. | ANTONIO K. OLMEDO, M.D. |
| RALPH J. GORTEN, B.A., M.D. | LAWRENCE J. PARISH, A.B., M.D. |
| GARY S. GOSHORN, A.B., M.D. | JOAN RASKIN, B.A., M.D. |
| WALTER N. HIMMLER, B.S., M.D. | CLOVIS M. SNYDER, A.B., M.D. |
| WACLAW HOJNOSKI, JR., B.A., M.A., M.D. | ROBERT WILLENKIN, B.A., M.D. |
| PAUL C. HUDSON, M.D. | CHARLES E. WRIGHT, A.B., M.D. |

² Beginning August 1, 1955.

INTERNS IN MEDICINE

THOMAS E. DAVIS, A.B., M.D.

HARRY H. HERBST, B.S., M.D.

LEONARD J. MORSE, B.A., M.D.

INTERN IN PEDIATRICS

MURRAY KAPPELMAN, B.S., M.D.

DENTAL INTERNS

ROBERT L. HELDRICH, A.B., D.D.S.

LEONARD H. JARVIS, JR., A.B., D.D.S.

MITCHEL POZEGA, A.B., D.D.S.

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT STAFF

ALBERT G. WNUK, *Director*

GYNECOLOGY, <i>Director of Clinics</i>	BEVERLEY C. COMPTON
<i>Chief of Clinic</i>	JAMES H. SHELL, JR.
	ERNEST I. CORNBROOKS, JR.
	W. ALLEN DECKERT
	THEODORE KARDASH
<i>Assistants</i>	NORMAN LEVIN
	RAYMOND L. MARKLEY
	GEORGE A. MAXWELL
	JAMES H. SHELL, JR.
	F. X. PAUL TINKER
	BEVERLEY C. COMPTON
	ERNEST I. CORNBROOKS, JR.
	WILLIAM K. DIEHL
<i>Cystoscopists, Female</i>	EVERETT S. DIGGS
	J. MASON HUNDLEY, JR.
	JAMES H. SHELL, JR.
	F. X. PAUL TINKER
ONCOLOGY (Gynecological Division)	
<i>Chief of Clinic</i>	WILLIAM K. DIEHL
	BEVERLEY C. COMPTON
<i>Assistants</i>	ERNEST I. CORNBROOKS, JR.
	EVERETT S. DIGGS
	FRANK K. MORRIS
MEDICINE, <i>Director of Clinics</i>	THEODORE E. WOODWARD
<i>Chief of Clinic</i>	JOSEPH C. FURNARI
	CONRAD ACTON
	ROBERT E. BAUER ⁶
	LOUIS V. BLUM
	FRANCIS BORGES
	JOSEPH BRONUSHAS
<i>Physicians</i>	M. PAUL BYERLY
	T. NELSON CAREY
	JONAS COHEN
	EDWARD F. COTTER
	WILLIAM F. COX, III ⁶
	JOHN B. DEHOFF

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

	CARL EBELING
	WETHERBEE FORT
	PERRY FUTTERMAN ⁶
	WILLIAM HELFRICH
	HENRY W. J. HOLLJES ⁶
	WALTER KARFGIN
	JAMES R. KARNS
	JOHN LEGGE
	KURT LEVY
	STEPHEN MAGNESS
<i>Physicians</i>	JOSEPH MATCHAR
	STANLEY MILLER
	DONALD MINTZER
	JOSEPH MUSE
	ROBERT T. PARKER
	GIOVANNI RACCUGLIA
	SAMUEL T. R. REVELL, JR.
	MILTON SACKS
	LEONARD SCHERLIS
	STANLEY STEINBACK
	KYLE SWISHER
	STEPHEN J. VAN LILL, III
ALLERGY, <i>Chief of Clinic</i>	HOWARD M. BUBERT
<i>Assistant Chief</i>	JEROME SHERMAN
<i>Assistant Allergists</i>	EDWARD S. KALLINS
	RAYMOND M. LAUER
ARTHRITIS, <i>Chief of Clinic</i>	LEON A. KOCHMAN
<i>Physician, Attending</i>	JOSEPH C. FURNARI
CARDIOVASCULAR CLINIC, <i>Chief</i>	C. EDWARD LEACH
	E. R. SMITH
<i>Cardiologists, Assistant</i>	WILFRED H. TOWNSEND
	STEPHEN J. VAN LILL, III
CARDIAC CLASSIFICATION UNIT, <i>Chief</i>	FRANCIS BORGES
CHEST CLINIC, <i>Chief</i>	MEYER W. JACOBSON
<i>Assistant Chief</i>	MANUEL LEVIN
DERMATOLOGY AND SYPHILIS CLINIC	
<i>Chief of Clinic</i> (2nd Director of Division)	HARRY M. ROBINSON, JR.
	EUGENE S. BERESTON
	WILLIAM R. BUNDICK
	FRANCIS A. ELLIS
<i>Dermatologists</i>	STANLEY N. JAFFE
	R. C. V. ROBINSON
	A. ALBERT SHAPIRO
	ISRAEL ZELIGMAN
	DAVID BACHARACH
	MORRIS M. COHEN
<i>Assistants</i>	MARK B. HOLLANDER
	LEE R. LERMAN
	JACOB LUDWIG

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

DIABETIC CLINIC, <i>Chief</i>	CHARLES E. SHAW
<i>Assistants</i>	{ FRANK KUEHN KENNEDY WALLER
GASTRO-ENTEROLOGY CLINIC, <i>Chief</i>	WM. CARL EBELING, III
<i>Assistant</i>	ALBERT J. SHOCHAT
HEMATOLOGY CLINIC, <i>Chief</i>	MILTON S. SACKS
<i>Assistant Chief</i>	STANLEY MILLER
<i>Physician, Attending</i>	IRVING FREEMAN
HYPERTENSIVE CLINIC, <i>Chief</i>	SAMUEL T. R. REVELL, JR.
<i>Assistant Chief</i>	FRANCIS J. BORGES
ISOTOPE CLINIC, <i>Chief</i>	JOSEPH B. WORKMAN
<i>Assistant Chief</i>	JOHN M. DENNIS
<i>Physicians, Attending</i>	{ ROBERT E. BAUER ⁶ ROBERT BOUDREAU EUGENE COVINGTON
NEUROLOGY CLINIC, <i>Chief</i>	CHARLES VAN BUSKIRK
<i>Neurologist, Assistant</i>	HARRY A. TEITLEBAUM
OBSTETRICAL CLINIC, <i>Chief of Clinic</i>	J. HUFF MORRISON
	FRANK W. BAKER
	HARRY MCB. BECK
	HARRY COHEN
	GEORGE H. DAVIS
	WILLIAM A. DODD
	DANIEL EHRLICH
	WILLIAM G. ENGLEHART
	VINCENT DEP. FITZPATRICK
	WILLIAM D. GENTRY
	THEODORE KARDASH
<i>Obstetricians, Assistant</i>	{ VERNON C. KELLY IRVIN P. KLEMKOWSKI NORMAN LEVIN W. K. MANSFIELD JOHN E. SAVAGE ERNEST SCHER BENSON C. SCHWARTZ J. K. B. E. SEEGAR JAMES H. SHELL, JR. F. X. PAUL TINKER THOMAS C. WEBSTER
OPHTHALMOLOGY CLINIC, <i>Chief</i>	J. E. BRUMBACK, JR.
<i>Ophthalmologists, Assistant</i>	{ JOHN C. OZAZEWSKI RUBY A. SMITH HENRY B. WILSON
ORAL SURGERY, <i>Chief</i>	BRICE M. DORSEY
<i>Assistant Chief</i>	JOSEPH P. CAPPUCCIO
PEDIATRIC CLINIC, <i>Director</i>	A. H. FINKELSTEIN
<i>Chief of Clinic</i>	SAMUEL S. GLICK
<i>Assistant Chief of Clinic</i>	KATHLEEN R. MCGRADY

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

	RUTH B. BALDWIN
	MELVIN N. BORDEN
	LESTER CAPLAN
	MIRIAM DALY
	GARRETT E. DEANE
	LEON DONNER
	EDWARD FIELD
<i>Pediatricians, Assistant</i>	KURT GLAZER
	HOWARD GOODMAN
	JOHN KRAGER
	MARY MATHEWS
	WILLIAM A. NIERMAN
	ALVIN STAMBLER
	WILLIAM EARL WEEKS
	J. CARLTON WICH
CARDIAC CLINIC (Pediatric) <i>Chief</i>	SIDNEY SCHERLIS
<i>Assistant Chief</i>	GIBSON J. WELLS
	MELVIN BORDEN
<i>Pediatricians, Assistant</i>	MARY HAYLECK
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CHEST CLINIC (Pediatric) <i>Chief</i>	LOUIS V. BLUM
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SEIZURE CLINIC (Pediatric) <i>Chief</i>	RUTH BALDWIN
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	RALPH L. DUNLAP
<i>Psychologists, Attending</i>	THOMAS D. HAUPT
	LESTER M. LIBO
	BENJAMIN POPE

UNIVERSITY HOSPITAL OUTPATIENT DEPARTMENT—*Cont'd.*

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<i>Radiologist</i>	LEONARD WARRES
SURGICAL CLINIC, <i>Chief</i>	ROBERT C. SHEPPARD
<i>Surgeons, Assistant</i>	{ WILLIAM D. LYNN WILLIAM B. SETTLE
NEUROSURGICAL CLINIC, <i>Chief</i>	WILLIAM H. MOSBERG, JR.
<i>Neurosurgical Surgeon, Asst.</i>	AUGUST KIEL, JR.
NEUROSURGICAL CLINIC (Pediatric), <i>Chief</i>	ROBERT M. N. CROSBY
ONCOLOGY CLINIC (Surgical Division) <i>Chief</i>	ARHTUR G. SIWINSKI
<i>Surgical Division (Assistants)</i>	{ E. EUGENE COVINGTON LOUIS E. GOODMAN J. DUER MOORES EDWIN H. STEWART
ORTHOPEDICS SURGERY CLINIC, <i>Chief</i>	ALLEN FISKE VOSHELL
<i>Orthopedic Surgeons, Asst.</i>	{ ELI LIPPMAN HENRY F. ULLRICH MILTON J. WILDER
OTOLARYNGOLOGY, <i>Chief</i>	RICHARD J. CROSS
<i>Otolaryngologists</i>	{ JAMES J. GERLACH FREDERICK L. STICHEL, JR. ROBERT HAASE FRANK B. DWYER
PLASTIC SURGERY, <i>Chief</i>	CLARENCE P. SCARBOROUGH
PROCTOLOGY CLINIC, <i>Chief</i>	JOHN D. ROSIN
<i>Proctologist, Assistant</i>	WILLIAM J. SUPIK
UROLOGY CLINIC, <i>Chief</i>	JOHN D. YOUNG, JR.
<i>Urologists, Assistant</i>	{ JOHN F. HOGAN, JR. JOHN F. HOGAN, SR. MARTIN A. ROBBINS IRVING SCHERLIS
VASCULAR CLINIC, <i>Chief</i>	GEORGE H. YEAGER
<i>Assistant Chief</i>	RAYMOND CUNNINGHAM
<i>Medical Consultant</i>	LEWIS P. GUNDRY

OUT-PATIENT REPORT

JANUARY 1, 1954 TO JANUARY 1, 1955

	<i>New Patients</i>	<i>Old Patients</i>		<i>Total Visits</i>
		<i>Re-visits</i>	<i>Referrals</i>	
Allergy.....	71	3434	79	3584
Arthritis.....	95	727	58	880
Cardiology.....	150	1069	1	1220
Chest.....	131	1225	321	1677
Child Guidance.....	9	69	17	95
Dental.....	139	802	992	1933
Diabetic.....	29	903	82	1014
Eye.....	532	1931	493	2956
Gastro-intestinal.....	56	762	102	920
Genito-urinary.....	356	1498	243	2097
G.U. Circumcision.....	1	16	22	39

	Old Patients			Total Visits
	New Patients	Re-visits	Referrals	
Gynecology.....	976	3883	261	5120
Gynecology—Screening.....	9	21	6	36
Hematology.....	25	505	13	543
Hypertension.....	5	74	34	113
Isotope.....	14	214	97	325
Medical.....	1136	5390	1258	7784
Medical Comprehensive.....	2	405	136	543
Neurology.....	51	320	74	445
Neurosurgery.....	95	424	207	726
Nose and Throat.....	449	616	239	1304
Obstetrics.....	1493	18072	437	20002
Occupational Therapy.....	—	828	42	870
Oncology—Gynecology.....	45	702	—	747
Oncology—Surgery.....	196	952	—	1148
Orthopedics.....	760	2563	603	3926
Pediatrics.....	3166	8444	57	11667
Pediatrics—Cardiology.....	12	433	58	503
Pediatrics—Chest.....	3	72	22	97
Pediatrics—Seizure.....	84	490	49	623
Physiotherapy.....	3	1666	278	1947
Plastic Surgery.....	9	9	9	27
Proctology.....	67	190	166	423
Psychiatry.....	306	3829	62	4197
Psychiatry—Child Guidance.....	10	1377	—	1387
Skin.....	1103	5622	785	7510
Department "S".....	118	1323	83	1524
Surgery.....	1973	5321	896	8190
Surgery—Residents.....	9	44	1	54
Vascular.....	79	337	51	467
Well Baby Clinic.....	680	4511	20	5211
TOTALS.....	14,447	81,073	8,354	103,874
White.....	24,283			
Colored.....	79,591			

MEDICAL CARE CLINIC UNIVERSITY HOSPITAL

Acting Director.....HARRY B. SCOTT
Associate Director.....RAY J. BEASLEY
Chief, Pediatrics Section.....GRANGE E. COFFIN

The Medical Care Clinic of the University of Maryland is the result of a study by the Medical and Chirurgical Faculty of Maryland in cooperation with the State Planning Commission. The present Clinic, located on the second floor of the Out-patient Department Building, is the first of its kind in this country. Public assistance clients are referred to the Clinic by the Baltimore City Health Department and are scheduled for an initial physical examination by physicians affiliated with the University of Maryland. A family physician is chosen by the patient from a list available at the Clinic. Copies of the individual's medical

history and examinations are sent to the physician selected, who then becomes responsible for the medical care of the patient.

The Medical Care Program is, in this way, an entirely new approach to the problem of the indigent patient. For the first time, he becomes the responsibility of a private physician. This places the practice of medicine to the indigent on a par with the practice of private medicine.

After the initial examination, the Clinic functions as a diagnostic center to serve the needs of the neighborhood practitioner. Consultants working in the Medical Care Clinic are available and at present represent Medicine, Surgery, Gynecology and Otolaryngology. Others will be added as required.

The Clinic functions between 8:30 and 4:30 daily. Registrations and referrals are conducted in the morning. Clinical examinations and consultations are held during the afternoon. Approximately two hundred neighborhood physicians have agreed to work with the Medical Care Program.

The University patient load of public assistance clients varies between 4000 and 5000 patients.

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MERCY HOSPITAL STAFF

ANESTHESIOLOGY

Anesthesiologist-in-Chief..... JAMES RUSSO⁶

Acting Anesthesiologist-in-Chief..... ELIZABETH Y. PAHK

Nurse, Anesthetists.....	{	ELIZABETH BRADY
		OLIVE GUNKEL
		ETHEL M. KANE
		KATHLEEN LINSENMEYER
		FRANCES V. OWINGS

⁶ On leave.

MERCY HOSPITAL STAFF—*Cont'd.*

BIOCHEMISTRY

Biochemist, Clinical CHARLES E. BRAMBEL

DENTISTRY

Dentist, Consulting CONRAD L. INMAN

Dentist, Chief J. D. FUSCO

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Dermatologist-in-Chief FRANCIS A. ELLIS

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GASTRO-ENTEROLOGY

Gastro-Enterologist, Consultant MAURICE FELDMAN

Gastro-Enterologist-in-Chief WM. CARL EBELING, III

Gastro-Enterologist, Associate PHILIP D. FLYNN

GYNECOLOGY

Gynecologist-in-Chief FRANK K. MORRIS

Gynecologists { JOHN J. ERWIN
EDWARD P. SMITH
GEORGE A. STRAUSS, JR.

Gynecologists, Associate { HARRY MCB. BECK
WILLIAM A. DODD
CHARLES H. DOELLER, JR.
WILLIAM C. DUFFY

FRANK W. BAKER
VINCENT DEP. FITZPATRICK, JR.
ANTHONY F. DiPAULA
GERALD A. GALVIN
WILLIAM D. GENTRY, JR.

Gynecologists, Assistant { HARRY F. KANE
JOHN M. PALESE
WILLIAM J. RYSANEK, JR.
WALTER K. SPELSBERG
F. X. PAUL TINKER
ROBERT B. TUNNEY
JOHN F. ULLSPERGER

HEMATOLOGY

Hematologist, Clinical H. RAYMOND PETERS

MEDICINE

Physician, Consulting MAURICE C. PINCOFFS

Physician-in-Chief H. RAYMOND PETERS

T. NELSON CAREY
J. SHELDON EASTLAND
LOUIS A. M. KRAUSE
Physicians { HENRY J. L. MARRIOTT
S. EDWIN MULLER
SOL SMITH
THOMAS P. SPRUNT

MERCY HOSPITAL STAFF—*Cont'd.*

<i>Physicians, Associate</i>	BARTUS T. BAGGOTT
	WETHERBEE FORT
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	J. EMMETT QUEEN
	FREDERICK J. VOLLMER
	HUGH J. WELCH
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	EARL L. CHAMBERS
	EDMUND P. COFFAY ⁶
	E. ELLSWORTH COOK, JR.
	JOHN R. DAVIS, JR.
	MAURICE FELDMAN, JR.
	CHARLES R. FRAVEL ⁶
	FRANCIS J. GERAGHTY
<i>Physicians, Assistant</i>	K. W. GOLLEY
	WILLIAM H. GRENZER
	ARTHUR KARFGIN
	FRANK T. KASIK, JR.
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	HARRY B. SCOTT
	MARGARET L. SHERRARD-HAMBERRY
	THADDEUS C. SIWINSKI
	S. A. TUMMINELLO

NEUROLOGY

<i>Neurologist, Consulting</i>	ANDREW C. GILLIS
<i>Neuro-Psychiatrist-in-Chief</i>	PHILIP F. LERNER
<i>Neurologists and Psychiatrists, Associate</i>	JOHN C. BRICKNER
	GEORGE G. MERRILL
	WILLIAM A. RINN
	SAMUEL S. WOLF ⁶
<i>Neurologist and Psychiatrist, Assistant</i>	JULIE FARLEY
<i>Neurologist Surgeon, Consultant</i>	CHARLES S. BAGLEY, JR.
<i>Neurological Surgeon-in-Chief</i>	JAMES G. ARNOLD, JR.
	JOHN W. CHAMBERS
	RICHARD B. COBLENTZ
	ROBERT M. N. CROSBY
	AUGUST KIEL, JR.
	WILLIAM H. MOSBERG, JR.
<i>Neurological, Surgeons</i>	FRANK J. OTENASEK
	RAYMOND K. THOMPSON

OBSTETRICS

<i>Obstetrician, Consulting</i>	EDWARD P. SMITH
<i>Obstetrician-in-Chief</i>	JOHN J. ERWIN

⁶On leave.

MERCY HOSPITAL STAFF—*Cont'd.*

<i>Obstetricians</i>	{	HARRY MCB. BECK
		WILLIAM A. DODD
		CHARLES H. DOELLER, JR.
		WILLIAM C. DUFFY
		HARRY F. KANE
		HUGH B. McNALLY
		FRANK K. MORRIS
		ROBERT B. TUNNEY
<i>Obstetricians, Associate</i>	{	J. BROOKE BOYLE, JR.
		ANTHONY F. DiPALUA
		VINCENT DeP. FITZPATRICK, JR.
		WILLIAM J. RYSANEK, JR.
<i>Obstetricians, Assistant</i>	{	FRANK W. BAKER
		H. HOWARD BURNS
		WILLIAM D. GENTRY
		WALTER K. SPELSBERG
		F. X. PAUL TINKER
		JOHN F. ULLSPERGER
OPHTHALMOLOGY		
<i>Ophthalmologist-in-Chief</i>		
<i>Ophthalmologists and Otolologists, Associate</i> ...	{	JOSEPH V. JEPPI
		JOSEPH I. KEMLER
		F. A. PACIENZA
		M. RASKIN
ORTHOPEDICS		
<i>Orthopedic Surgeon-in-Chief</i>		HARRY L. ROGERS
<i>Orthopedic Surgeon, Associate</i>		HENRY F. ULLRICH
<i>Orthopedic Surgeons, Assistant</i>	{	J. H. GASKEL
		ISAAC GUTMAN
		EVERETT D. JONES
		I. H. MASERITZ
OTOLARYNGOLOGY		
<i>Otolaryngologists, Consulting</i>	{	W. RAYMOND MCKENZIE
		GEORGE W. MITCHELL
		WAITMAN F. ZINN
<i>Otolaryngologist and Bronchoesophagologist-in-Chief</i>		THEODORE A. SCHWARTZ
<i>Otolaryngologist and Bronchoesophagologists, Associate</i>	{	ROBERT Z. BERRY
		BENJAMIN H. ISAACS
		FAYNE A. KAYSER
		BENJAMIN S. RICH
		ARTHUR WARD
<i>Otolaryngologist and Bronchoesophagologists, Assistant</i>	{	SAMUEL L. FOX
		JAMES J. GERLACH
		HARRY P. PORTER
		JOHN M. REHBERGER
PATHOLOGY		
<i>Pathologist, Clinical</i>		H. T. COLLENBERG
<i>Pathologist, Consulting</i>		HUGH R. SPENXER
<i>Pathologist-in-Chief</i>		C. GARDNER WARNER

MERCY HOSPITAL STAFF—*Cont'd.*

PEDIATRICS

<i>Pediatrician, Consulting</i>	EDGAR B. FRIEDENWALD
<i>Pediatrician-in-Chief</i>	FREDERICK B. SMITH
<i>Pediatrician, Associate</i>	G. BOWERS MANSORFER
	{ DONALD D. COOPER
	{ JOSEPH M. CORDI
	{ HERBERT L. ECKERT ⁶
	{ JEROME FINEMAN
	{ EDWARD L. FREY, JR.
<i>Pediatricians, Assistant</i>	FREDERICK J. HELDRICH
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	{ ISRAEL P. MERANSKI
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	{ EARL WEEKS
	{ J. CARLTON WICK

PLASTIC SURGERY

Surgeons.....	{ EDWARD A. KITLOWSKI
	{ CLARENCE P. SCARBOROUGH

PROCTOLOGY

<i>Proctologist-in-Chief</i>	SIMON BRAGER
<i>Proctologist, Associate</i>	WILLIAM J. SUPIK

RADIOLOGY

<i>Radiologist-in-Chief</i>	EDWARD R. DANA
<i>Radiology, Supervisor</i>	ELIZABETH KENLY, RN
	{ SISTER M. JANE FRANCES
	{ JEAN ADAMS
	{ SARA CROSS
<i>Radiology, Technicians</i>	SHIRLEY HORNER
	{ RUTH MAY, RN
	{ ELSIE MORRIS
	{ BARBARA POTTS

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<i>Surgeon-in-Chief</i>	DANIEL J. PESSAGNO
<i>Senior Surgeon</i>	WALTER D. WISE
	{ HENRY F. BONGARDT
<i>Surgeons</i>	{ THOMAS R. CHAMBERS
	{ F. L. JENNINGS
	{ WILLIAM F. RIENHOFF, JR.
	{ SIMON BRAGER
	{ RAYMOND F. HELFRICH
	{ CHARLES W. MAXSON
<i>Surgeons, Associate</i>	HOWARD B. McELWAIN
	{ JAMES W. NELSON ⁶
	{ JOHN A. O. RIDGELY
	{ I. RIDGEWAY TRIMBLE
	{ HAROLD P. BIEHL
<i>Surgeons, Assistant</i>	HAROLD H. BURNS
	{ S. DeMARCO, JR.
	{ MICHAEL L. DeVINCENTIS

⁶ On leave.

MERCY HOSPITAL STAFF—*Cont'd.*

	{	WILLIAM C. DUNNIGAN ⁶
	{	FRANK A. FARAINO
	{	WILLIAM L. GARLICK
	{	WILLIAM R. GERAGHTY
	{	JULIUS GOODMAN
	{	CALVIN Y. HADIDIAN
<i>Surgeons, Assistant</i>	{	JOSEPH V. JERARDI
	{	F. FORD LOKER
	{	KIRK MOORE
	{	PATRICK C. PHELAN, JR.
	{	JOHN F. SCHAEFER
	{	T. J. TOUHEY
	{	HOWARD L. ZUPNIK
THORACIC SURGERY		
<i>Thoracic Surgeon-in-Chief</i>		WILLIAM L. GARLICK
<i>Thoracic Surgeons, Assistant</i>	{	FRANK A. FARAINO ⁶
	{	CALVIN Y. HADIDIAN
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<i>Urologist-in-Chief</i>		KENNETH D. LEGGE
	{	WILFORD A. COUNCILL, JR.
	{	LEON J. FARGO
<i>Urologists, Associate</i>	{	FRANCIS W. GILLIS
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	{	T. BARLOW
	{	ELEANOR BEHR
	{	VIRGINIA BONELLI
	{	CONSTANCE CHAPMAN
	{	GERALDINE DABRZYKOWSKI
<i>Technicians, Laboratory</i>	{	JANET ESTES
	{	PATRICIA FOGARTY
	{	ELIZABETH JOHNSON
	{	JESSIE MEYERS
	{	CARMELA MICELI
	{	THERESA PAPIRI
	{	ANN ROGERS
	{	FLORESE SAMORODIN

MERCY HOSPITAL RESIDENT AND INTERN STAFF

JULY 1, 1955—JUNE 30, 1956

RESIDENT STAFF

CHARLES MCGRADY, JR., B.S., M.D.....	<i>Resident in Surgery</i>
FAUSTO M. PREZIOSO, M.D.....	<i>Associate Resident Surgeon</i>
LEONARD H. FLAX, B.S., M.D.....	<i>Sr. Asst. Resident in Surgery</i>
RICHARD E. SCHINDLER, B.S., M.D.....	<i>Sr. Asst. Resident in Surgery</i>

⁶ On leave.

MERCY HOSPITAL RESIDENT AND INTERN STAFF—*Cont'd.*

HILBERT M. LEVINE, A.B., M.D.....	<i>Jr. Asst. Resident in Surgery</i>
BEN STORER, M.D.....	<i>Jr. Asst. Resident in Surgery</i>
RAFAEL LONGO-CORDERO, B.S., M.D.....	<i>Asst. Resident in Neurosurgery</i> (July 1, 1955–October 31, 1955)
ROBERT A. MOORE, JR., A.B., M.D.....	<i>Asst. Resident in Neurosurgery</i> (November 1, 1955–Feb. 29, 1956)
WILLIAM H. SLASMAN, JR., A.B., M.D.....	<i>Asst. Resident in Neurosurgery</i> (March 1, 1956–July 1, 1956)
JACOB ZIMMERMAN, M.D.	<i>Resident in Thoracic Surgery</i>
FRANK G. KUEHN, A.B., M.D.....	<i>Resident in Medicine</i>
GEORGE H. BECK, A.B., M.D.....	<i>Sr. Asst. Resident in Medicine</i>
EDWARD W. HOPF, B.S., M.D.....	<i>Jr. Asst. Resident in Medicine</i>
DONALD A. GILLIS, B.S., M.D.....	<i>Jr. Asst. Resident in Medicine</i>
JOHN F. HARTMAN, B.S., M.D.....	<i>Jr. Asst. Resident in Medicine</i>
SAMUEL M. BRADLEY, B.S., M.D.....	<i>Jr. Asst. Resident in Medicine</i>
LOUIS L. MOULD, M.D.....	<i>Resident in Gynecology & Obstetrics</i>
GEORGE H. MILLER, B.S., M.D.....	<i>Sr. Asst. Res. in Gyn & Obs.</i>
JOHN A. SANDERS, B.S., M.D.....	<i>Sr. Asst. Res. in Gyn & Obs.</i>
O. NORMAN FORREST, JR., A.B., M.D.....	<i>Jr. Asst. Res. in Gyn & Obs.</i>
EDWARD T. HOGAN, B.S., M.D.....	<i>Jr. Asst. Res. in Gyn & Obs.</i>
GEORGE M. BAURENSCHUB, JR., B.S., M.D.....	<i>General Practice Residency</i>
JAMES A. HIGGS, JR., B.S., M.D.....	<i>General Practice Residency</i>
G. V. RAMA ROW, M.B., B.S., M.D.....	<i>Resident in Pediatrics</i>
YUNG-TSING WONG, M.D.....	<i>Assistant Resident in Pediatrics</i>
JOHN W. HEISSE, JR., A.B., M.D.....	<i>Resident in Otolaryngology</i>
ROBERTO I. LABALAN, D.M.D.....	<i>Resident in Dentistry</i>
JACINTO GOCHOCO, JR., A.A., M.D.....	<i>Resident in Pathology</i>
SANTIAGO LOMBANA, M.D.....	<i>Fellow in Thoracic Surgery</i>

ROTATING INTERNES

ALBERT M. ANTLITZ, B.S., M.D.	PAUL G. MUELLER, M.D.
JOSEPH P. C. BOGGIO, B.S., M.D.	JOSEPH T. MULLEN, A.B., M.S., M.D.
JOSEPH W. CAVALLARO, B.S., M.D.	LAWRENCE E. PIERCE, M.D.
JOHN J. DARRELL, M.D.	JOHN E. SCHANBERGER, A.B., M.D.
JOHN L. FAHEY, M.D.	LEONARD F. SMITH, A.B., M.D.
JOHN P. KELLY, B.S., M.D.	WILLIAM G. SUTLIVE, M.D.
ROBERT G. LANCASTER, B.S., M.D.	WILLIAM J. VITALE, B.S., M.D.
ANTHONY A. LEWANDOWSKI, A.B., M.D.	DONALD O. WOOD, B.S., M.D.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF

GYNCOLOGY CLINIC, <i>Chief</i>	FRANK K. MORRIS
	FRANK W. BAKER
	HARRY McB. BECK
	ANTHONY F. DiPAULA
	CHARLES H. DOELLER, JR.
<i>Assistants</i>	WILLIAM A. DODD
	WILLIAM C. DUFFY
	VINCENT DeP. FITZPATRICK, JR.
	GERALD A. GALVIN

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Cont'd.*

	JOHN M. PALESE
	WILLIAM J. RYSANEK, JR.
<i>Assistants</i>	WALTER K. SPELSBERG
	F. X. PAUL TINKER
	ROBERT B. TUNNEY
	JOHN F. ULLSPERGER
MEDICINE, <i>Directors of Clinics</i>	H. RAYMOND PETERS
<i>Chiefs of Clinics</i>	S. EDWIN MULLER
	SOL SMITH
	J. HOWARD BURNS
	EARL L. CHAMBERS
	EDMUND P. COFFAY ⁶
	E. ELLSWORTH COOK, JR.
	JOHN R. DAVIS, JR.
	MAURICE FELDMAN, JR.
	WILLIAM H. GRENZER
	CHARLES R. FRAVEL ⁶
	WILLIAM H. KAMMER
<i>Assistants</i>	ARTHUR KARFGIN
	FRANK T. KASIK
	ROBERT J. LYDEN
	JOHN C. OSBORNE
	JOSEPH F. PALMISANO
	J. EMMETT QUEEN
	M. KEVIN QUINN
	DONALD J. ROOP
	HARRY B. SCOTT
	MARGARET L. SHERRARD-HAMBERRY
	FREDERICK J. VOLLMER
ALLERGY CLINIC, <i>Chief</i>	S. EDWIN MULLER
ANTICOAGULANTS, <i>Medical Director of Clinic</i>	H. T. COLLEMBERG
ANTICOAGULANTS, <i>Director of Clinic</i>	CHARLES E. BRAMBEL
CARDIOVASCULAR CLINIC, <i>Acting Chief</i>	HENRY J. L. MARRIOTT
<i>Assistant Chief</i>	LEON ASHMAN
DIABETIC CLINIC, <i>Chief</i>	J. SHELDON EASTLAND
<i>Assistant</i>	J. EMMETT QUEEN
DENTAL CLINIC, <i>Chief</i>	JOSEPH D. FUSCO
<i>Assistants</i>	G. ROBERT MCLEAN
	EDWARD R. STINEBERT
<i>Consultant</i>	CONRAD L. INMAN
DERMATOLOGY-SYPHILIS CLINIC, <i>Chief</i>	FRANCIS A. ELLIS
<i>Assistants</i>	EUGENE S. BERESTON
	WM. R. BUNDICK
	R. C. V. ROBINSON
GASTRO-ENTEROLOGY CLINIC, <i>Chief</i>	WM. CARL EBELING, III
<i>Associate</i>	PHILIP D. FLYNN
<i>Consultant</i>	MAURICE FELDMAN, SR.
NEUROLOGY-PSYCHIATRY CLINIC, <i>Chief</i>	PHILIP F. LERNER
<i>Associate</i>	GEORGE G. MERRILL

⁶ On leave.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Cont'd.*

<i>Assistants</i>	{	JOHN C. BRICKNER
	{	JULIE FARLEY
	{	WILLIAM A. RINN
	{	FREDERICK F. WOLFF ⁶
<i>Consultant</i>		ANDREW C. GILLIS
OPHTHALMOLOGY CLINIC, <i>Chief</i>		
<i>Associates</i>	{	JOSEPH V. JEPPI
	{	FRANK A. PACIENZA
<i>Consultant</i>		M. RASKIN
OBSTETRICS CLINIC, <i>Chief</i>		JOHN J. ERWIN
<i>Assistants</i>	{	FRANK W. BAKER
	{	HARRY MCB. BECK
	{	J. BROOKE BOYLE
	{	WILLIAM A. DODD
	{	VINCENT DEP. FITZPATRICK, JR.
	{	WILLIAM D. GENTRY
	{	HARRY KANE
	{	ANTHONY F. DiPAULA
	{	WILLIAM J. RYSANEK, JR.
	{	WALTER K. SPELSBERG
	{	ROBERT B. TUNNEY
<i>Pediatric Clinic, Director</i>	{	F. X. PAUL TINKER
	{	JOHN F. ULLSPERGER
<i>Chief of Clinic</i>		FRED B. SMITH
<i>Assistants</i>		G. BOWERS MANSDORFER
	{	JOSEPH CORDI
	{	HERBERT L. ECKERT ⁶
	{	EDWARD L. FREY
	{	DAVID JOSEPHS
	{	FREDERICK HELDRICH
	{	MARY E. MATTHEWS
	{	ISRAEL T. MERANSKI
	{	G. WALTER SPURRIER
	{	EARL WEEKS
<i>Pediatric-Neurology</i>	{	CARLTON WICK
	{	ROBERT N. M. CROSBY
PHYSIOTHERAPISTS.....	{	LEON HANNAN
	{	ALICE R. HANNAN
RADIOLOGY.....		EDWARD R. DANA
SURGICAL CLINIC, <i>Director</i>		DANIEL J. PESSAGNO
<i>Assistants</i>		HAROLD H. BURNS
	{	HAROLD P. BIEHL
	{	MICHAEL L. DeVINCENTIS
	{	WILLIAM C. DUNNIGAN ⁶
	{	FRANK A. FARAINO ⁶
	{	WILLIAM L. GARLICK
	{	CALVIN Y. HADIDIAN
	{	JOSEPH V. JERARDI
		F. FORD LOKER

⁶ On leave.

MERCY HOSPITAL OUTPATIENT DEPARTMENT STAFF—*Cont'd.*

	{	KIRK MOORE
	{	PATRICK C. PHELAN, JR.
	{	MELVIN F. POLEK
<i>Assistants</i>	{	JOHN F. SCHAEFER
	{	ARTHUR G. SWINSKI
	{	I. RIDGEWAY TRIMBLE
	{	PAUL R. ZIEGLER
	{	HOWARD ZUPNIK
NEURO-SURGERY CLINIC, <i>Chief</i>	{	JAMES G. ARNOLD, JR.
	{	JOHN W. CHAMBERS
<i>Associates</i>	{	FRANK J. OTENASEK
	{	RAYMOND K. THOMPSON
	{	AUGUST KIEL, JR.
<i>Assistants</i>	{	WILLIAM H. MOSBERG, JR.
<i>Consultant</i>	{	CHARLES J. BAGLEY, JR.
ONCOLOGY CLINIC, <i>Chief</i>	{	JAMES W. NELSON ⁶
<i>Consultant</i>	{	ARTHUR G. SIWINSKI
ORTHOPEDICS CLINIC, <i>Chief</i>	{	HARRY L. ROGERS
	{	JASON H. GASKEL
<i>Associates</i>	{	ISAAC GUTMAN
<i>Assistant</i>	{	EVERETT D. JONES
OTOLARYNGOLOGY, <i>Broncho-Eosophagology Clinic,</i> <i>Chief</i>	{	THEODORE A. SCHWARTZ
	{	ROBERT Z. BERRY
	{	JAMES J. GERLACH
<i>Otolaryngologist and Bronchoesophagologist</i>	{	BENJAMIN H. ISAACS
<i>Assistants</i>	{	HARRY P. PORTER
	{	JOHN M. REHBERGER
	{	ARTHUR WARD
PLASTIC SURGERY CLINIC, <i>Chief</i>	{	EDWARD A. KITLOWSKI
<i>Assistant</i>	{	CLARENCE P. SCARBOROUGH
PROCTOLOGY CLINIC, <i>Chief</i>	{	SIMON BRAGER
<i>Assistant</i>	{	WILLIAM J. SUPIK
THORACIC SURGERY CLINIC, <i>Chief</i>	{	WILLIAM L. GARLICK
	{	FRANK A. FARAINO ⁶
<i>Assistants</i>	{	CALVIN Y. HADIDIAN
UROLOGY CLINIC, <i>Chief</i>	{	KENNETH D. LEGGE
	{	WILFORD A. COUNCILL, JR.
	{	L. K. FARGO
<i>Assistants</i>	{	FRANCIS W. GILLIS
	{	JOHN S. HAINES
OUTPATIENT DEPARTMENT, <i>Director</i>	{	SISTER MARY ANITA, R.S.M.
MEDICAL SOCIAL SERVICE, <i>Director</i>	{	SISTER MARY SCHOLASTICA, R.S.M.

MEDICAL CARE CLINIC

MERCY HOSPITAL

<i>Director</i>	S. EDWIN MULLER
<i>Assistant Director</i>	M. PATRICIA LENNON

⁶ On leave.

The Medical Care Clinic at Mercy Hospital is one of six special clinics established and conducted for the Baltimore City Health Department. These clinics were established by the Medical and Chirurgical Faculty of Maryland and the State Planning Commission. The program takes up an unmet need for the indigent.

The City Welfare Department certifies recipients of public assistance to the Health Department. The Health Department in turn, assigns recipients to one of the medical care clinics operated by local hospitals, namely—Johns Hopkins, Sinai, University of Maryland, Mercy, Provident and South Baltimore. The clinic assignments are made primarily on a geographic basis.

During the current year the Medical Care Clinic at Mercy Hospital is providing facilities for three thousand clients. It provides the eligible individual an initial physical examination, chest X-ray, bacteriological and other laboratory tests as indicated. Arrangements are also made by the Clinic to have each client register with a family physician of his or her choice selected from those Baltimore physicians who have agreed to participate in the program. The Clinic notifies the physician chosen, and sends to him a complete written report of the physical findings.

The plan gives physicians an opportunity for contacts with the personnel and diagnostic facilities of the participating hospitals. At the request of the client's physician, consultation services of the Staff at Mercy are made available. These services include Medicine, Surgery, Gynecology, Urology, Orthopedics, Dermatology, Neurology and other specialties, together with clinical laboratory facilities.

The Mercy Clinic is located on the 4th floor of the College Building. It includes a reception area, offices and examining rooms. An active personnel of Doctors, Nurses, Medical Technician and Medical Secretary are on duty from 9 A.M. to 5 P.M.

MERCY HOSPITAL OUT-PATIENT DEPARTMENT REPORT JANUARY 1, 1954 TO JANUARY 1, 1955

	<i>Visits</i>		
	<i>New</i>	<i>Old</i>	<i>Total</i>
<i>Medical Clinics</i>			
Allergy	14	96	110
Cardiac	49	671	720
Chest	8	72	80
Diabetic	27	740	767
Gastro-Intestinal	39	189	228
Hypertensive*	28	192	220
Medicine	637	3508	4145
Neurology	105	743	848
Skin	358	820	1178
<i>Surgical Clinics</i>			
Genito-Urinary	80	237	317
Neurological Surgery	60	165	225
Orthopedics	278	537	815
Proctology	58	68	126
Surgery, General	1022	2693	3715
Surgical Follow-Up	157	547	704
<i>Other Clinics</i>			
Dental	355	456	811
Eye	366	412	778
Gynecology	427	1291	1718
Medical Care	350	0	350

MERCY HOSPITAL OUT-PATIENT DEPARTMENT REPORT—*Cont'd.*

	<i>Visits</i>		
	<i>New</i>	<i>Old</i>	<i>Total</i>
Nose and Throat	533	1028	1561
Pediatrics	666	1816	2482
Physiotherapy	24	440	464
Prenatal	376	2531	2907
Postnatal	235	1	236
Well Baby	85	298	383
Total	6,337	19,551	25,888

Average number of out-patient visits per clinic day = 102.

* Hypertensive clinic began in May, 1954.

THE BALTIMORE CITY HOSPITALS

STAFF, 1955-1956

PARKER J. McMILLIN, *Superintendent*

ANESTHESIOLOGIST, <i>Chief</i>	To be appointed
DENTAL DIVISION, <i>Chief</i>	H. GLENN WARING, D.D.S.
	L. W. BIMESTEFER, D.D.S.
	ELPIDIO DIAZ, D.D.S.
Dental Surgeons, <i>Visiting</i>	B. MIKSINSKI, D.D.S.
	JOHN T. REILLY, D.D.S.
	MICHAEL VARIPATIS, D.D.S.
GYNCOLOGIST, <i>Chief</i>	BEVERLEY C. COMPTON, M.D.
	WILLIAM K. DIEHL, M.D.
Gynecologists, <i>Consultant</i>	EVERETT S. DIGGS, M.D.
	GERALD GALVIN, M.D.
	RAYMOND, MARKLEY, M.D.
MEDICINE, <i>Physician-in-Chief</i>	GEORGE S. MIRICK, M.D.
	DOUGLAS CARROLL, M.D.
Physicians-in-Chief, <i>Assistant</i>	FRANCIS P. CHINARD, M.D.
	HOWARD K. RATHBUN, M.D.
	JOHN G. WISWELL, M.D.
Physician, <i>Hospital—OPD</i>	ORLYN H. WOOD, M.D.
	HILTGUNT M. ZASSENHAUS, M.D.
	BARNETT BERMAN, M.D.
	ERNEST CROSS, JR., M.D.
	JOSEPH D. B. KING, M.D.
	CRAWFORD KIRKPATRICK, M.D.
	SHELDON C. KRAVITZ, M.D.
Physicians, <i>Visiting</i>	JULIUS KREVANS, M.D.
	MILTON LANDOWNE, M.D.
	LOUIS C. LASAGNA, M.D.
	DAVID LUKENS, M.D.
	THOMAS VAN METRE, M.D.
	WILLIAM G. SPEED, III, M.D.
	JULIUS WAGHELSTEIN, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

	{	CHARLES ADAMS, M.D.
	{	ROGER L. BLACK, M.D.
	{	FRANCES BORGES, M.D.
	{	STANLEY COHEN, M.D.
	{	WILLIAM A. FEARING, M.D.
	{	SAMUEL LEGUM, M.D.
	{	RAYMOND LIU, M.D.
<i>Physicians, Assistant Visiting—OPD</i>	{	JOSEPH M. L. MARRIOTT, M.D.
	{	ANNE B. MCKUSICK, M.D.
	{	ROBERT A. REITER, M.D.
	{	AUBREY RICHARDSON, M.D.
	{	SIDNEY SCHERLIS, M.D.
	{	KYLE SWISHER, M.D.
	{	PHILIP WHITTLESBY, M.D.
	{	DANIEL WILFSON, M.D.
	{	JOSEPH B. WORKMAN, M.D.
	{	SAUL BAKER, M.D.
<i>Physicians, Assistant Visiting—USPHS</i>	{	GEORGE GAFFNEY, M.D.
	{	JOSEPH FALSONE, M.D.
	{	FELIX SILVERSTONE, M.D.
	{	WARDE B. ALLEN, M.D.
	{	C. HOLMES BOYD, M.D.
	{	JOSEPH BUNIM, M.D.
	{	C. LOCKARD CONLEY, M.D.
	{	A. MURRAY FISHER, M.D.
<i>Physicians, Consulting</i>	{	A. M. HARVEY, M.D.
	{	JOHN E. HOWARD, M.D.
	{	JOHN T. KING, M.D.
	{	L. A. M. KRAUSE, M.D.
	{	JOSEPH LILIENTHAL, M.D.
	{	THEODORE WOODWARD, M.D.
<i>Dermatologist, Consulting</i>	{	RAYMOND C. V. ROBINSON, M.D.
<i>Neurologists, Consulting</i>	{	FRANK FORD, M.D.
	{	THOMAS VAN BUSBIRK, M.D.
<i>Neurologist, Visiting</i>	{	J. W. MAGLADERY, M.D.
	{	DAVID B. CLARK, M.D.
<i>Neurologists, Assistant Visiting</i>	{	CHARLES LUTTRELL, M.D.
	{	ROBERT TEASDALL, M.D.
<i>Physicists, Consulting</i>	{	THEODORE ENNS, M.D.
	{	WILLIAM R. MILNOR, M.D.
<i>Physiologist (USPHS)</i>	{	NATHAN W. SHOCK, PhD.
<i>Psychiatrist, Visiting</i>	{	THEODORE M. FELDBERG, M.D.
<i>Psychiatrist, Assistant Visiting</i>	{	JOHN B. IMBODEN, M.D.
<i>Obstetrician, Visiting</i>	{	J. MORRIS REESE, M.D.
	{	GEORGE W. ANDERSON, M.D.
	{	GEORGE CORNER, M.D.
	{	J. WILLIAM DORMAN, M.D.
<i>Obstetricians, Assistant Visiting</i>	{	LOUIS C. GAREIS, M.D.
	{	WILLIAM GENTRY, M.D.
	{	D. FRANK KALTREIDER, M.D.
	{	JOHN SAVAGE, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

PATHOLOGIST, <i>Chief</i>	ABOU D. POLLACK, M.D.
<i>Pathologist, Associate Chief</i>	DONALD D. MARK, M.D.
<i>Neuropathologist, Visiting</i>	JOHN WAGNER, M.D.
PEDIATRICIAN-IN-CHIEF	HAROLD E. HARRISON, M.D.
<i>Pediatrician-in-Chief, Assistant</i>	LAURENCE FINBERG, M.D.
<i>Pediatrics, Hospital Physician in</i>	JAMES CHISOLM, JR., M.D.
<i>Pediatrician, Consultant in Cardiology</i>	HELEN TAUSSING, M.D.
	EUGENE KAPLAN, M.D.
	MILTON MARKOWITZ, M.D.
<i>Pediatricians, Visiting</i>	ANTHONY PERLMAN, M.D.
	TALMADGE PINKNEY, M.D.
	ARNOLD TRAMER, M.D.
RADIOLOGIST, <i>Chief</i>	JOHN DECARLO, M.D.
<i>Radiologists, Visiting</i>	NATHAN HYMAN, M.D.
	PHILIP MYERS, M.D.
SURGEON-IN-CHIEF	OTTO C. BRANTIGAN, M.D.
	THURSTON ADAMS, M.D.
<i>Surgeons, Consulting</i>	HARRY C. BOWIE, M.D.
	AMOS KOONTZ, M.D.
	I. RIDGEWAY TRIMBLE, M.D.
	DONALD HEBB, M.D.
<i>Surgeons, Visiting</i>	WILLIAM LYNN, M.D.
	JOSEPH MILLER, M.D.
	JAMES C. OWINGS, M.D.
<i>Gastro-enterology, Consultant in</i>	WILLIAM EBELING, M.D.
<i>Hand Surgery, Consultant in</i>	RAYMOND CURTIS, M.D.
<i>Neuro-Surgery, Consultant (Honorary)</i>	CHARLES BAGLEY, M.D.
	JAMES G. ARNOLD, M.D.
<i>Neuro-Surgery, Consultants</i>	RICHARD COBLENTZ, M.D.
	R. K. THOMPSON, M.D.
	ROBERT M. N. CROSBY, M.D.
<i>Neuro-Surgeons, Visiting</i>	AUGUST KIEL, M.D.
	WILLIAM MOSBERG, M.D.
<i>Oncologist, Visiting</i>	ARTHUR SIWINSKI, M.D.
<i>Ophthalmologist, Visiting</i>	WILLIAM MARR, M.D.
<i>Orthopedic Surgery, Consultant in</i>	ALLEN VOSHELL, M.D.
	ISAAC GUTMAN, M.D.
<i>Orthopedic Surgeons, Visiting</i>	JOHN TANSEY, M.D.
	MILTON J. WILDER, M.D.
	JOHN BORDLEY, M.D.
<i>Otolaryngology, Consultants in</i>	FRED KYPER, M.D.
	ALFRED LIEBERMAN, M.D.
<i>Otolaryngologist, Visiting</i>	ALVIN WENGER, M.D.
<i>Peripheral Vascular Diseases, Consultant in</i>	GEORGE YEAGER, M.D.
<i>Plastic Surgery, Consultant in</i>	CLARENCE P. SCARBROUGH, M.D.
<i>Proctology, Consultant in</i>	MONTE EDWARDS, M.D.
<i>Thoracic Surgery, Consultant in</i>	WILLIAM GARLICK, M.D.
<i>Thoracic Surgeons, Visiting</i>	CALVIN HADIDIAN, M.D.
	ELLIOTT MICHELSON, M.D.
<i>Traumatic Surgery, Consultant in</i>	C. A. REIFSCHNEIDER, M.D.

BALTIMORE CITY HOSPITAL STAFF—*Cont'd.*

<i>Urologists, Consultants in</i>	{ HUGH JEWETT, M.D. HOWARD B. MAYS, M.D. JOHN D. YOUNG, M.D.
<i>Urologists, Visiting</i>	{ JOHN HOGAN, M.D. HERMAN J. MEISEL, M.D.
TUBERCULOSIS, <i>Physician-in-Chief</i>	EDMUND G. BEACHAM, M.D.
<i>Physicians, Hospital</i>	{ MUTLU ATAGUN, M.D. HERMAN SCHAEFER, M.D. SAMUEL SEGAL, M.D.
<i>Physician, Visiting—Tbc (Honorary)</i>	H. VERNON LANGELOTTIG, M.D.
<i>Physicians, Visiting—Tbc</i>	{ JOHN HIRSCHFELD, M.D. M. W. JACOBSON, M.D.
<i>Psychiatrists, Visiting—Tbc</i>	{ RICHARD H. DOSS, M.D. WILLIAM H. EDWARDS, JR., M.D.

BALTIMORE CITY HOSPITALS

RESIDENT AND INTERNE STAFF, 1955-1956

ANESTHESIOLOGY

Resident, 1st Assistant..... LOURDES AGUTO

DENTAL

Resident..... ALEJANDRO CUNANAN

Interne..... BAHMAN KHALKALI

GYNECOLOGY

Resident..... YVES BOENNEC

Assistant Residents..... { BERNARD DAVIS
SEVERIN GOLOJUCH
MANUEL ROCHA

MEDICINE

Resident..... GORDON CADER

Assistant Resident—(Neuro)..... EIJIRO SATOYOSHII

{ PERRY AUSTIN
BERNARD A. COOPER
WORTH DANIELS
MASON F. LORD

Assistant Residents..... { DAVID N. MARINE
ERIDA L. REICHERT
GERALD WEINTRAUB
DONALD WEIR

{ E. HUNTER WILSON
NELSON G. GOODMAN

Jr. Assistant Residents..... { JOHN KUKRAL
MARK C. LEVINE
DOUGLAS B. BELL

{ ERIC V. EISNER
MICHAEL M. GEDULDIG

Interns..... { DONALD LABRECQUE
CONSTANCE S. PITTMAN
FRANK C. SCHWALBE
FERNANDO VESCIA

BALTIMORE CITY HOSPITAL RESIDENT AND INTERN STAFF—*Cont'd.*

OBSTETRICS

<i>Resident</i>	GUILLERMA NAVAL
<i>Assistant Residents</i>	{ HENRY ALDIS
	{ RAFAEL GARCIA
	{ TALAT AKYUZ
	{ JOSE CABARROCAS
	{ MARIA T. GATUE
<i>Jr. Assistant Residents</i>	{ CHEN YEN KAU
	{ YONG KUN PAK
	{ ANTONIO PALLADINO
	{ CHIUNG YIN YAUG

PATHOLOGY

<i>Resident</i>	OSCAR EGUIA
<i>Jr. Assistant Residents</i>	{ FREDERIK BONEBAKKER
	{ CLEOPATRA PAPASSARA
	{ MORIHISA YAMAGISHI

PEDIATRICS

<i>Resident</i>	CARL BRANNAN
<i>Assistant Residents</i>	{ M. KATHLEEN CARNEY—from 1/1
	{ HANNELORE HEINEBERG
	{ MEHDI MACKIA
<i>Jr. Assistant Residents</i>	{ M. KATHLEEN CARNEY—to 12/31
	{ LORRAINE COUTURE
	{ YAHYA BERKMAN
<i>Internes</i>	{ THOMAS DRAPER
	{ RONALD STRAIR

RADIOLOGY

<i>Resident</i>	JAYKER PANDYA
<i>Jr. Assistant Resident</i>	DOGAN KIZILAY

SURGERY

<i>Resident</i>	FREDERICK PANICO
<i>1st Assistant Residents</i>	{ FERNANDO ALONSO-LEJ
	{ WILLIAM KESSLER
	{ ENRIQUE PALACIOS
<i>1st Assistant Resident—Urology</i>	GEORGE PIPIS
<i>1st Assistant Resident—E.N.T.</i>	GABRIEL TUCKER
<i>2nd Assistant Residents</i>	{ ALBERT BENSIMOL
	{ FELICIEN STEICHEN
	{ HERBERT V. SWINDELL
	{ RAFAEL LONGO-CORDERO
<i>2nd Assistant Residents—Neuro</i>	{ ROBERT MOORE
	{ WILLIAM SLASMAN
<i>2nd Assistant Resident—Thoracic</i>	JACOB ZIMMERMAN
<i>Fellow in Thoracic Surgery</i>	SANTIAGO LOMBANA
<i>2nd Assistant Residents—Ophthal.</i>	{ JAMES B. NAIL—to 12/31/55
	{ CHARLES HEDGES—from 1/1/56
	{ DALE BERTSON
	{ AUTORIO BOBA
<i>Jr. Assistant Residents</i>	{ PAUL CHANG
	{ FARUK IDRIS
	{ FREDERICO LUNA
	{ MALEK SHEIBANI—from 10/1/55

BALTIMORE CITY HOSPITAL RESIDENT AND INTERN STAFF—*Cont'd.*

TUBERCULOSIS

<i>Resident</i>	EVA MANNHEIM
<i>Assistant Resident</i>	CHUNG S. PARK
<i>Jr. Assistant Resident</i>	HARI NATH PAL
	{ DAVID BARCLAY
	{ DENNIS FARRELL
	{ JAMES FROESCHLE
ROTATING INTERNES.....	{ JOHN HINTON
	{ MARY MUNCH
	{ POLISOES POLIZOS
	{ MACKENZIE SMITH

THE JAMES LAWRENCE KERNAN HOSPITAL AND
INDUSTRIAL SCHOOL OF MARYLAND FOR
CRIPPLED CHILDREN

STAFF, 1955-1956

<i>Surgeon-in-Chief and Medical Director</i>	ALLEN FISKE VOSHELL, A.B., M.D.
	{ MOSES GELLMAN, B.S., M.D.
	{ HARRY L. ROGERS, M.D.
	{ HENRY F. ULLRICH, M.D.
	{ WINTHROP M. PHELPS, A.B., M.D.
<i>Associate Orthopaedic Surgeons</i>	{ MILTON J. WILDER, M.D.
	{ DAVID L. FILTZER, M.D.
	{ JAMES P. MILLER, M.D.
	{ ROBERT C. ABRAMS, M.D.
	{ ISAAC A. GUTMAN, M.D.
	{ JOHN J. TANSEY, M.D.
<i>Röntgenologist</i>	{ EVERETT D. JONES, M.D.
	{ JOHN DE CARLO, JR., M.D.
<i>Plastic Surgeon</i>	EDWARD A. KITLOWSKI, A.B., M.D.
<i>Aurist and Laryngologist</i>	BENJAMIN S. RICH, A.B., M.D.
<i>Dentist</i>	M. E. COBERTH, D.D.S.
<i>Cardiologist</i>	HELEN M. TAUSSIG, M.D.
<i>Pediatricist</i>	MELCHIJAH SPRAGINS, M.D.
<i>Consulting Surgeon</i>	CHARLES REID EDWARDS, A.B., M.D.
<i>Consulting Neurological Surgeon</i>	CHARLES BAGLEY, JR., M.A., M.D.
<i>Consulting Dermatologists</i>	{ HARRY M. ROBINSON, SR., M.D.
	{ LEON GINSBURG, M.D.
<i>Consulting Neurologists</i>	{ IRVING J. SPEAR, M.D.
	{ R. V. SELIGER, M.D.
<i>Consulting Pediatricists</i>	{ BENJAMIN TAPPAN, A.B., M.D.
	{ J. EDMUND BRADLEY, M.D.
<i>Consulting Pathologist</i>	HUGH R. SPENCER, M.D.
<i>Consulting Röntgenologist</i>	HENRY J. WALTON, M.D.
<i>Resident Orthopaedic Surgeon</i>	{ ELI M. LIPPMAN, M.D.
	{ RALPH A. REILLY, M.D.

KERNAN HOSPITAL STAFF—*Cont'd.*

<i>Superintendent</i>	MISS MAUD M. GARDNER, R.N.
<i>Dispensary and Social Service Nurse</i>	MRS. EVELYN BYRD ZAPP, R.N.
<i>X-ray Technicians</i>	{ MISS NANCY R. BUTLER MISS JULIA A. COLLINS MRS. GEORGIANA WISONG
<i>Physical Therapists</i>	WILLIAM NEILL, III
<i>Instructor in Grammar School</i>	MISS BERTHA SENDELBACK

HISTORY OF THE SCHOOL OF MEDICINE

The present School of Medicine, with the title University of Maryland School of Medicine and College of Physicians and Surgeons, is the result of a consolidation and merger of the University of Maryland School of Medicine with the Baltimore Medical College (1913) and the College of Physicians and Surgeons of Baltimore (1915).

Through the merger with the Baltimore Medical College, an institution of thirty-two years' growth, the facilities of the School of Medicine were enlarged in faculty, equipment and hospital connection.

The College of Physicians and Surgeons was incorporated in 1872, and established on Hanover Street in a building afterward known as the *Maternité*, the first obstetrical hospital in Maryland. In 1878 union was effected with the Washington University School of Medicine, in existence since 1827, and the college was removed to Calvert and Saratoga Streets. Through the consolidation with the College of Physicians and Surgeons, medical control of the teaching beds in the Mercy Hospital was obtained.

The School of Medicine of the University of Maryland is one of the oldest foundations for medical education in America, ranking fifth in point of age among the medical colleges of the United States. It was organized in 1807 and chartered in 1808 under the name of the College of Medicine of Maryland, and its first class was graduated in 1810. In 1812 the College was empowered by the Legislature to annex three other colleges or faculties: Divinity, Law, and Arts and Sciences; and the four colleges thus united were "constituted an University by the name and under the title of the University of Maryland."

The original building of the Medical School at the N. E. corner of Lombard and Greene Streets was erected in 1812. It is the oldest structure in this country from which the degree of doctor of medicine has been granted annually since its erection. In this building were founded one of the first medical libraries and one of the first medical school libraries in the United States.

At this Medical School dissection was made a compulsory part of the curriculum, and independent chairs for the teaching of gynecology and pediatrics (1867), and of ophthalmology and otology (1873), were installed for the first time in America.

This School of Medicine was one of the first to provide for adequate clinical instruction by the erection of its own hospital in 1823. In this hospital intramural residency for senior students was established for the first time.

The School of Medicine has been co-educational since 1918.

BUILDINGS AND FACILITIES

The original medical building at the N. E. corner of Lombard and Greene Streets houses the office of the Dean, Room 101, the office of the Committee on Admissions, Room 102, two lecture halls, the faculty room and office of the assistant business manager.

The Administration Building, to the east of the original building, contains the Baltimore offices of the Registrar and two lecture halls.

The laboratory building at 31 South Greene Street is occupied by the departments of Pathology, Bacteriology and Biochemistry.

The Frank C. Bressler Research Laboratory provides the departments of Anatomy, Histology and Embryology, Pharmacology, Physiology and Clinical Pathology with facilities for teaching and research. It also houses the research laboratories of the clinical departments, animal quarters, a laboratory for teaching Operative Surgery, a lecture hall and the Bressler Memorial Room.

This building was erected in 1939-1940 at 29 South Greene Street opposite the University Hospital. It was built with funds left to the School of Medicine by the late Frank C. Bressler, an alumnus, supplemented by a grant from the Federal government. The structure, in the shape of an I, extends east from Greene Street, just north of the original building.

MEDICAL LIBRARY

The Medical Library of the University of Maryland, founded in 1813 by the purchase of the collection of Dr. John Crawford, now numbers 35,000 volumes and several thousand pamphlets and reprints. Over four hundred of the leading medical journals, both foreign and domestic, are received regularly. The library is housed in Davidge Hall, in close proximity to classrooms and laboratories, and is open daily for the use of members of the faculty, the student body and the profession generally. Libraries pertaining to particular phases of medicine are maintained by several departments of the medical school.

The library of the Medical and Chirurgical Faculty of Maryland and the Welch Medical Library are open to students of the medical school without charge. Other libraries of Baltimore are the Peabody Library and the Enoch Pratt Free Library.

OUT PATIENT DEPARTMENT

The Out Patient Department is located on the S.W. corner of Lombard and Greene Streets. The building was originally the University Hospital. It has been remodeled to provide space and facilities for more than thirty clinics, the departments of X-ray, a Pharmacy, Laboratory and other ancillary services. Admission policies are predicated upon the teaching requirements of the School of Medicine and the ward services of the University Hospital.

A close liaison is maintained with the City Health Department through the joint efforts of the University Hospital and the City Department of Health in maintaining the Well Baby Clinic, the Western Health District and the Medical Care Clinic, which are housed in the Out Patient Department building.

The Department of Art and the Department of Dental Anatomy also have quarters in the Out Patient Department building.

UNIVERSITY HOSPITAL

The University Hospital, which is a Department of the University of Maryland is the oldest institution for the care of the sick in the State of Maryland. It was opened in September 1823 under the name of the Baltimore Infirmary and at that time consisted of only four wards, one of which was reserved for patients with diseases of the eye.

In 1933-1934 the new University Hospital Building was erected. It has a capacity of 435 beds and 65 bassinets. In 1952-1953 an ultra-modern Psychiatric Institute Building was erected and a junctional wing was added to the general hospital. The new additions increased the hospital bed capacity to 659 beds and 70 bassinets devoted to general medicine, surgery, obstetrics, pediatrics, psychiatry and the various medical and surgical specialties. Three hundred and forty-two are for ward patients.

The new hospital buildings are situated at the southwest corner of Redwood & Greene Streets opposite the medical school buildings. The students, therefore, are in close proximity and little time is lost in passing from the lecture halls and laboratories to the clinical facilities of the University Hospital. The hospital as planned, makes a particularly attractive teaching unit and is a very valuable addition to the clinical teaching facilities of the medical school.

Most of the Ancillary Services are located on the second floor of the Hospital. The north wing is occupied by the department of roentgenology. The east wing houses clinical pathology and special laboratories for clinical microscopy, biochemistry, bacteriology, and an especially well appointed laboratory for students' training. The south wing provides space for electro-cardiographic and basal metabolism departments, with oxygen therapy cubicles. The west wing contains the departments of rhinolaryngology and bronchoscopy, industrial surgery, and male and female cystoscopy.

The Emergency Service of the hospital receives and treats a large number of emergency cases because of its proximity to the largest manufacturing and shipping districts of the city. During the past fiscal year a total of 27,839 patients were treated in the Emergency Room.

The Out Patient Department of the University Hospital is a well organized teaching area. Over 100,000 visits to the various clinics of the Out Patient Department were made during the last fiscal year. Junior medical students are assigned during one-third of the school year in the departments of medicine and surgery in the Out Patient Clinic. Senior students are assigned to the various special departments and clinics.

THE PSYCHIATRIC INSTITUTE

The Psychiatric Institute of the University was opened for the care of patients in 1953. It is a six-story building connected directly with the University Hospital, of which it is an integral part. It houses the Department of Psychiatry of the Medical School. The upper three floors of the building are reserved for the treatment and care of 100 in-patients. The out-patient unit, which includes the child guidance clinic and adult psychiatric clinics, occupies the three lower floors. Clinical and research laboratories are located in the first and second floors of the connecting wing. There is a lecture hall and a large study library on the first floor.

Each of the upper floors is arranged into two wards with dining rooms next to a central kitchen for each ward. A nurses' station is in the center of each floor allowing ready visibility and access to the rooms along the corridors. The third and fourth floors are used for disturbed patients.

Facilities are available to treat patients in every phase of psychiatric illness and rehabilitation. Rooms are available for the care of patients in the acutely disturbed

phase of their illness. There are small units for various types of shock treatments and for hydrotherapy situated on and adjacent to the disturbed wards.

Recreational facilities are available for adults and children in a large auditorium and gymnasium on the seventh floor which lead to an enclosed roof. A large playground is available to in-patients and out-patients alike.

The lower three floors of the building are used for the child guidance clinic and for out-patients. There are 63 offices available to physicians, nurses, psychologists and social workers; also available are five large waiting rooms and three conference rooms. Eleven offices are adjacent to the wards and fourteen offices can be used for both in-patients and clinic patients. Sixteen offices have microphone outlets so physicians can make recordings for study. A library of recordings is near the main library where students can listen to recorded interviews.

Space is provided for clinical and research laboratories. EEG connections are available to several laboratories. Three clinical laboratories, a psychological laboratory and a neuro-physiological laboratory are in the connecting wing between the psychiatric unit and the general hospital. These are available for purposes of diagnosis, treatment and research.

MERCY HOSPITAL

Mercy Hospital traces its history back to the foundation of the Washington School of Medicine in 1824. In 1872 some of the members of this institution founded a new school, which was the beginning of the College of Physicians and Surgeons of Baltimore.

Washington School of Medicine opened a dispensary and a small hospital at the corner of Saratoga and Calvert Streets and named it the Baltimore City Hospital. This building served both as a hospital and a medical school. In 1874 the Sisters of Mercy, upon the invitation of Washington School of Medicine, assumed responsibility for the Nursing Services of the hospital. In 1876, Washington University merged with the College of Physicians and Surgeons.

In 1888 the Sisters of Mercy with the assistance of the Faculty of the College of Physicians and Surgeons laid the cornerstone of the present hospital. Since then the growing demands for more space have compelled the erection of addition after addition until now it accommodates 356 patients.

In 1909 the name of the Baltimore City Hospital was changed to Mercy Hospital.

The clinical material in the free wards is under the exclusive control of the University of Maryland School of Medicine and College of Physicians and Surgeons. One hundred ninety-three beds are allotted for teaching purposes.

During the year ending December 31, 1954, there were 13,087 general admissions, 25,888 dispensary visits, 2,544 obstetrical deliveries, and 14,330 emergency visits in the Accident Department.

Mercy Hospital founded its School of Medical Technology in 1928. It was officially approved in 1933 making it the first approved School of Medical Technology in the city. It is also approved by the Council of Medical Education and Hospitals of the American Society of Clinical Pathologists.

The clinical facilities of the School of Medicine have been largely increased by the liberal decision of the Department of Public Welfare to allow the use of the wards of these hospitals for medical education. The autopsy material also is available for student instruction.

Members of the junior class make daily visits to these hospitals for clinical instruction in medicine, surgery, and the specialties.

The Baltimore City Hospitals consist of the following separate divisions:

The General Hospital, 420 beds, 80 bassinets.

The Hospital for Chronic Cases, 500 beds.

The Hospital for Tuberculosis, 440 beds.

Infirmary (Home for Aged) 425 beds.

Out Patient Department.

THE JAMES LAWRENCE KERNAN HOSPITAL AND INDUSTRIAL SCHOOL OF MARYLAND FOR CRIPPLED CHILDREN

This institution is situated on an estate of 75 acres at Dickeyville. The site is within the northwestern city limits and of easy access to the city proper.

The location is ideal for the treatment of children, in that it affords all the advantages of sunshine and country air.

A hospital unit, complete in every respect, offers all modern facilities for the care of any orthopaedic condition in children.

The hospital is equipped with 80 beds—endowed, and city and state supported.

The orthopaedic dispensary at the University Hospital is maintained in closest affiliation and cares for the cases discharged from the Kernan Hospital. The physical therapy department is very well equipped with modern apparatus and trained personnel. Occupational therapy has been fully established and developed under trained technicians.

THE BALTIMORE EYE, EAR, AND THROAT HOSPITAL

This institution was first organized and operated in 1882 as an outgrowth of the Baltimore Eye and Ear Dispensary, which closed on June 14, 1882. The name then given to the new hospital was The Baltimore Eye and Ear Charity Hospital. It was located at the address now known as 625 W. Franklin St. The out-patient department was opened on September 18, 1882 and the hospital proper on November 1 of the same year. In 1898 a new building afforded 24 free beds and 8 private rooms; by 1907 the beds numbered 47; at present there are 60 beds, 29 of which are free. In 1922 the present hospital building at 1214 Eutaw Place was secured and in 1926 the dispensary was opened. In 1928 a clinical laboratory was installed. During 1953 the out-patient visits numbered 22,434.

Through the kindness of the Hospital Board and Staff, our junior students have access to the dispensary which they visit in small groups for instruction in ophthalmology.

LUTHERAN HOSPITAL OF MARYLAND INC.

The Lutheran Hospital of Maryland Inc., originally organized in 1923 as the West Baltimore General Hospital, is a general hospital of 191 adult beds and 43

bassinets, located in the western section of the city. The hospital became an affiliate of the School of Medicine in 1953.

The Lutheran Hospital of Maryland offers an academic postgraduate program in the major specialties of medicine, surgery, gynecology, and obstetrics, being fully approved by the respective American Boards. A postgraduate teaching program of lectures and clinics is an integral part of the residency training. The hospital provides modern laboratory and library facilities, particularly adapted to postgraduate medical education. An adequate clinical service is maintained for training in the medical and surgical specialties. All academic programs are under the supervision of a Director of House Officer Training.

REQUIREMENTS FOR ADMISSION

METHOD OF MAKING APPLICATION FOR ADMISSION

When to apply:

Applications must be filed during the period from September 15 to January 15 for the subsequent September class.

Where to apply:

Requests for application forms should be sent to the Committee on Admissions, School of Medicine, University of Maryland, 522 West Lombard Street, Baltimore 1, Maryland.

APPLICATION FOR ADMISSION TO ADVANCED STANDING

Students who have attended approved medical schools are eligible to file applications for admission to the second- and third-year classes only. These applicants must be prepared to meet the current first-year entrance requirements in addition to presenting acceptable medical school credentials, and a medical school record based on courses which are quantitatively and qualitatively equivalent to similar courses in this school.

Application to advanced standing is made in accordance with the instructions accompanying the application form.

Persons who already hold the degree of Doctor of Medicine will not be admitted to the Medical School as a candidate for that degree from this university.

MINIMUM REQUIREMENTS FOR ADMISSION

The minimum requirements for admission to the School of Medicine are:

- (a) Graduation from an approved secondary school, or the awarding of a high school equivalency certificate by a state or county board of public education, and
- (b) Three academic years of acceptable college credit, exclusive of physical education and military sciences, earned in colleges of arts and sciences, whose names occur in the current list of "Approved Colleges of Arts and Sciences" as compiled by the Council on Medical Education and Hospitals of the American Medical Association. The quantity and quality of this course of study shall be equivalent to that required for recommendation by the institution where the college courses are being, or have been, pursued.
- (c) The following courses and credits in required basic subjects must be completed by June of the year the applicant desires to be admitted:

	<i>Semester hours</i>	<i>Quarter hours</i>
General biology or zoology.....	*(6) 8	*(9) 12
Inorganic chemistry.....	*(6) 8	*(9) 12
Organic chemistry.....	6-8	9-12
† Quantitative chemistry.....	4	6
General physics.....	*(6) 8	*(9) 12
English.....	6	9
Modern language (German, French, Spanish) . .	6	9

* Consideration will be given applicants from the New England area where 6 semester hours, or 9 quarter hours, is the standard credit for a science course.

† Effective for admission September 1957 and thereafter.

- (d) The total semester-hour or quarter-hour credits presented must be equivalent in quantity and quality to three-fourths of the credit requirement for graduation by the recommending institution, exclusive of courses in physical education and military sciences.

Applicants who are unable to complete these requirements by June of the year admission is desired, will be considered contingent on places being available, provided all basic required courses and credits shall have been absolved by June as indicated in (c) above.

- (e) Students will not be admitted who have unabsolved conditions or failures in college courses.

Elective courses should be selected from the following three groups. Highly desirable courses are shown in bold face type.

<i>Humanities</i>	<i>Natural Sciences</i>	<i>Social Sciences</i>
English (an advanced course in English composition should be taken, if possible)	Vertebrate Embryology	Economics
Scientific German or French (A reading knowledge of either language is desirable, although German is preferred)	Comparative Vertebrate Anatomy	History
Philosophy	Quantitative Analysis	Political Science
	Physical Chemistry	Psychology (a general course is desirable)
	Mathematics	Sociology, etc.

Careful attention should be given the selection of elective courses in the natural sciences. It is suggested that the elective list given herewith be used as a guide. The remainder of college credits should be accumulated from courses designed to promote a broad cultural development. Thirty six semester hours in the humanities and social sciences are recommended in a three-year college course. Students should avoid taking courses in college which are included in the medical curriculum, for example histology, human anatomy, bacteriology, physiology, neurology and physiological chemistry.

It is not intended that these suggestions be interpreted as restrictions upon the education of students who manifest an aptitude for the natural sciences or as

limitations upon the development of students who plan to follow research work in the field of medicine.

In accepting candidates for admission, preference will be given to those applicants who have acceptable scholastic records in secondary school and college, satisfactory scores in the Medical College Admission Test, given in May each year, favorable letters of recommendation from their premedical committees, or from one instructor in each of the departments of biology, chemistry, and physics, and who in other respects give promise of becoming successful students and physicians of high standing.

Those candidates for admission who are permanently accepted will receive a certificate of matriculation from the office of the Dean.

COMBINED COURSE IN ARTS AND SCIENCES AND MEDICINE

A combined seven years' curriculum leading to the degrees of Bachelor of Science and Doctor of Medicine is offered by the University of Maryland. The first three years are taken in residence in the College of Arts and Sciences at College Park, and the last four years in the School of Medicine in Baltimore. (See University catalogue for details of quantitative and qualitative college course requirements.)

If a candidate for the combined degree completes the work of the first year in the School of Medicine with an average of C or better without failures, and if he has absolved the quantitative and qualitative college requirements set up by the University, he is eligible to recommendation by the Dean of the School of Medicine that the degree of Bachelor of Science be conferred.

Because the general commencement usually takes place before the School of Medicine is prepared to release grades of the first-year class, this combined degree of Bachelor of Science is conferred at the commencement following the candidate's second year of residence in the School of Medicine.

STATE MEDICAL STUDENT QUALIFYING CERTIFICATES

Candidates for admission who live in or expect to practice medicine in Pennsylvania, New Jersey or New York, should apply to their respective state boards of education for medical student qualifying certificates (Pennsylvania and New Jersey) or approval of applications for medical student qualifying certificates (New York).

Those students who are accepted must file satisfactory State certificates in the office of the Committee on Admissions, School of Medicine, before registration. No exceptions will be made to this requirement.

Addresses of the State Certifying Offices

Director of Credentials Section, Pennsylvania Department of Public Instruction, Harrisburg, Pa.

Chief of the Bureau of Credentials, New Jersey Department of Public Instruction, Trenton, N. J.

Supervisor of Qualifying Certificates, The State Education Department, Examinations and Inspections Division, Albany, N. Y.

DEFINITION OF RESIDENCE AND NON-RESIDENCE

Students who are minors are considered to be resident students if at the time of their registration their parents have been domiciled in this State for at least one year.

The status of the residence of a student is determined at the time of his first registration in the University, and may not thereafter be changed by him unless, in the case of a minor, his parents move to and become legal residents of the State by maintaining such residence for at least one full year. However, the right of the minor students to change from a non-resident to resident status must be established by him prior to the registration period for any semester.

Adult students are considered to be resident if at the time of their registration they have been domiciled in this State for at least one year provided such residence has not been acquired while attending any school or college in Maryland or elsewhere.

The word domicile as used in this regulation shall mean the permanent place of abode. For the purpose of this rule only one domicile may be maintained.

CURRENT FEES

Application fee.....	\$7.50
Matriculation fee (paid once).....	10.00
Tuition fee (each year)—Residents of Maryland.....	650.00
Tuition fee (each year)—Non-Residents.....	800.00
Laboratory fee (each year).....	25.00
Student health service fee (each year).....	30.00
Student activities and service fee (each year).....	20.00
†Lodging and meals fee.....	20.00
Graduation fee.....	15.00
Re-examination fee (each subject).....	5 00
Transcript fee to graduates. First copy gratis, single copies thereafter..	1 00
Late registration fee.....	5 00

† Senior Students will be billed for this fee, covering lodging and meals for a two-week period while on obstetrical service at Baltimore City Hospitals. **This fee must be paid by all senior students whether or not they serve during the previous summer or during the academic year.**

RULES FOR PAYMENT OF FEES

No fees are returnable.

Make all checks or money orders payable to the "University of Maryland".

When offering checks or money orders in payment of tuition and other fees, students are requested to have them drawn in the exact amount of such fees. Personal checks whose face value is in excess of the fees due will be accepted for collection only.

Acceptance.—Payment of the matriculation fee of \$10.00 and of a deposit on tuition of \$50.00 is required of accepted applicants before the expiration date specified in the offer of acceptance. This remittance will be credited upon registration to the first semester charges. In the event of withdrawal before regis-

tration the \$10.00 matriculation fee will be retained by the School of Medicine and the \$ 50.00 advance deposit will be returned on request.

Registration.—All students, after proper certification, are required to register at the business office, Gray Laboratory. All students are expected to complete their registration, including the payment of bills prior to or on regular registration days. Those who do not complete their registration on the prescribed days will be charged a fee of \$5.00.

One-half of the tuition fee and all of the following—the laboratory fee, the student health fee, the maintenance and service fee and the student activities fee are payable on the date specified for registration for the first semester.

The remainder of the tuition fee shall be paid on the date designated for the payment of fees for the second semester. Fourth year students shall pay the graduation fee, in addition, at this time.

PENALTY FOR NON-PAYMENT OF FEES

If semester fees are not paid in full on the specified registration dates, a penalty of \$5.00 will be added.

If a satisfactory settlement, or an agreement for settlement, is not made with the business office within ten days after a payment is due, the student automatically is debarred from attendance on classes and will forfeit the other privileges of the School of Medicine.

REEXAMINATION FEE

A student who is eligible to reexaminations must pay the business office \$5.00 for each subject in which he is to be examined, and he must present the receipt to the faculty member giving the examination before he will be permitted to take the examination.

STUDENT ACTIVITIES AND SERVICE FEE

This fee pays for the use of clothing lockers, provides library privileges, maintains student loan collections, a student lounge and cafeteria. It supports a recreational program for students of all classes and provides photographs for identification for all school purposes, including state boards. It supports the activities of the Student Council. A portion (\$5) of this fee provides a year-book for each medical student.

STUDENT HEALTH SERVICE

JAMES R. KARNS, M.D. Director, Student Health Service.

The Medical School has made provision for the systematic care of undergraduate medical students according to the following plan:

1. *Preliminary Examination*—All new students will be examined during the first week of the semester. Notice of the date, time, and place of the examination will be announced to the classes and on the bulletin board. The passing of this physical examination is necessary before final acceptance of any student.

2. *Medical Attention*—Students in need of medical attention will be seen by the director, Dr. James R. Karns, in his office on the 8th floor University Hospital

at 12 m. daily, except Saturday and Sunday. In case of necessity, students will be seen at their homes.

3. *Hospitalization*—If it becomes necessary for any student to enter the hospital during the school year, the school has arranged for the payment of part or all of his hospital expenses, depending on the length of his stay and special expenses incurred. This applies only to students admitted through the school physician's office.

4. *Physical Defects*—Prospective students are advised to have any known physical defects corrected before entering school in order to prevent loss of time which later correction might incur.

5. *Eye Examination*—Each new matriculant is required to undergo an eye examination at the hands of an oculist (Doctor of Medicine) within the three months immediately preceding his entrance to the School of Medicine. Long study hours bring out unsuspected eye defects which cause loss of time and inefficiency in study if not corrected before school work is under way.

6. *Limitations*—It is not the function of this service to treat chronic conditions contracted by students before admission, nor to extend treatment to acute conditions arising in the period between academic years, unless the school physician recommends this service.

GENERAL RULES

The right is reserved to make changes in the curriculum, the requirements for graduation, the fees and in any of the regulations whenever the university authorities deem it expedient.

GRADING SYSTEM

Official grades are designated by these symbols:

<i>Symbol</i>	<i>Scholarship</i>	<i>Numerical Equivalent</i>
A	Superior	93-100
B	Good	87- 92
C	Fair	80- 86
D	Passing	75- 79
F	Failure	Below 75
I	Incomplete	—
WF	Withdrew, failing	—

The class standing of seniors only will be released. This standing will appear on senior grade reports sent out from the Registrar's office after graduation.

ADVANCEMENT AND GRADUATION

1. No medical student will be permitted to begin work for credit in any semester of any year who reports for classes later than one week after classes begin, except by permission of the Dean.

2. No student will be permitted to advance with unabsolved failures.

3. An average of C or better without failures in the year most recently completed is required for advancement to junior and senior standing and for graduation.

4. A student who in any one year has one failure together with grades of D in all other subjects, will be dropped from the rolls.

5. A student who has failures in two completed major subjects will be dropped from the rolls.

6. Students are required to attend all scheduled classes.

7. Should a student be required to repeat any year in any course, he must pay regular fees.

8. A student failing his final examinations for graduation at the end of the fourth year will be required to repeat the entire course of the fourth year and take examinations in such other branches as may be required, provided he is permitted to enter the school as a candidate for graduation.

9. The general fitness of a candidate for advancement and for graduation as well as the results of his examinations will be taken into consideration by the faculty.

EQUIPMENT

10. At the beginning of the first year, all freshmen must provide themselves with microscopes of a satisfactory type equipped with a mechanical stage and a substage lamp. Also, each freshman must possess a complete set of dissecting instruments and for the second semester each first year student must provide himself with a stethoscope, sphygmomanometer, ophthalmoscope and otoscope.

A standard microscope made by Bausch & Lomb, Leitz, Zeiss or Spencer fitted with the following attachments, meets the requirements.

16 mm., 10x, 0.25 N.A.—4.9 mm. working distance.

4 mm., 43x, 0.65 N.A.—0.6 mm. working distance.

1.8 mm., 97x, oil immersion, 1.25 N.A.—0.13 mm. working distance.

Oculars: 10x and 5x. Huygenian eyepieces.

Triple nose pieces with 16 mm., 4 mm., and 1.9 mm. 125 N.A. oil immersion lens.

Wide aperture stage with quick screw condenser and built on, but detachable, ungraduated mechanical stage. Substage condenser, variable focusing type 1.25 N.A. with iris diaphragm. A rack and pinion focusing device is preferred. Mirror-plane on one side, concave on the other. A carrying case is recommended.

Students are cautioned with respect to the purchase of used or odd-lot microscopes since some older instruments were equipped with a 4 mm. (high dry) objective whose N.A. is marked as 0.85 N.A. This objective has such a short working distance (0.3 mm.) that it is difficult or impossible to focus through thick cover glasses or the standard haemocytometer cover glass without breakage. All used microscopes are subject to inspection and approval by the Division of Microscopic Anatomy. Microscopes to be inspected should be brought to Room 209 second floor Bressler Research Laboratory, 29 S. Greene Street before September 10. This inspection is not usually made during August.

11. Students in the second year class are required to provide themselves with a haemocytometer. Third and fourth year students are required to provide themselves with short white lapel coats. Three button, 8 ounce sanforized duck are satisfactory.

STATE QUALIFYING CERTIFICATES

12. Candidates for admission who live in or expect to practice medicine in Pennsylvania or New Jersey should apply to their respective State Boards of Education for Medical Student Qualifying Certificates. These certificates should be filed with the Committee on Admissions. Candidates from New York must have completed at least two years of approved liberal arts study including courses of 6 semester hours of English, 6 hours of Biology or Zoology, 6 hours of Physics, 6 hours of General Chemistry and 3 hours of Organic Chemistry in order to be eligible for admission to the medical licensing examination in New York.

13. Each new matriculant in each class is required to present to the Committee on Admissions a certificate from an oculist, (a graduate in medicine) that the matriculate's eyes have been examined under a cycloplegic and are in condition, with or without glasses as the case may be, to endure the strain of close and intensive reading.

It is required that this examination be completed within three months prior to registration and that the certificate be mailed to the Committee on Admissions not later than one month before registration.

AWARDING OF COMBINED DEGREES

14. Students entering the School of Medicine on a three-year requirement basis from colleges which usually grant a degree on the successful completion of the first year of medicine, are restricted by the following regulations:

- a—The candidate must present a certificate from his college or university that he has absolved the quantitative and qualitative premedical requirements for this degree.
- b—The candidate must acquire an average of C or better without failures for the work of his first year in the School of Medicine.
- c—The Dean of the School of Medicine reserves the right to withhold his recommendation that a bachelor's degree be conferred at a commencement which occurs before the official release of first-year medical grades.

COST OF TRANSCRIPTS

15. Graduates will receive the first transcript of record without charge. After the first copy has been issued single copies will cost one dollar. When two or more copies are requested at the same time the first copy will cost one dollar, additional copies fifty cents each. Requests for transcripts must be filed with the Registrar's Office, University of Maryland, 522 West Lombard Street, Baltimore-1, Maryland.

CHANGE OF ADDRESS

16. Students are required to give the Dean's Office prompt notice of change in address.

PARKING

17. Students are not permitted to use the university parking lots.

HOUSING

There are no housing or living accommodations on the campus of the medical school.

LIBRARY REGULATIONS

Loan Regulations

Loan periods have been worked out according to demand for and protection of different types of material.

Two-Week Loans: All books except those on reserve.

One-Week Loans: All journals except the latest number (which does not circulate), and those on reserve.

Overnight Loans: Books and journals on reserve.

(4 p.m.-12:30 a.m.)

Special Rules for Books on Reserve:

Students whose names appear on the check-list for the Mercy Hospital section will be granted the necessary hours to return reserve books.

Overnight books may be reserved in advance only within the week in which they will be used. Books may be reserved on Saturday for the following Monday.

Overnight books may not be reserved two successive nights by the same person.

Advance reserves will be held until one hour before closing.

Fines

Fines are imposed not to acquire money, but to assure equal access to books

Two-Week Loans: 5¢ per day.

One-Week Loans: 5¢ per day.

Overnight Loans: 15¢ for first hour; 5¢ for each additional hour or fraction thereof.

Lost Books: List price of the book. (Lost books should be reported at once).

All books must be returned, lost books replaced or paid for, and fines paid before a student can finish the year in good standing.

In fairness to all concerned, these rules must be enforced without exception.

CERTIFICATION FOR STATE BOARD AND NATIONAL BOARD
EXAMINATIONS

No student will be certified to State Board or National Board examiners who has unabsolved failures in subjects taken during the academic period covered by these examinations.

WITHDRAWALS AND REFUNDS

Formal Withdrawal Procedures

Students over 21 years of age desiring to leave the School of Medicine at any time during the academic year are required to file with the Dean a written application for withdrawal. In addition, the student must secure an "honorable dismissal release" form from the Dean's secretary, and return this to the Dean's office

appropriately signed by representatives of the departments listed thereon, together with his "matriculation certificate."

If these procedures are not completed, the student will not be entitled to honorable dismissal nor to refund of fees.

Students under 21 years of age, must supplement the procedures previously described with the written consent of their parents or guardians.

Academic Standing On Withdrawal

Students who voluntarily withdraw during an academic semester will be given no credit.

Students are not permitted to resort to withdrawal in order to preclude current or impending failures. Their standing on withdrawal will be recorded in the registrar's office.

Students who withdraw from the School of Medicine, must apply to the Committee on Admissions for readmission, unless other arrangements have been consummated with the Dean's written consent.

Refunds on Withdrawal

Students who are eligible to honorable dismissal will receive a refund of current charges, after the matriculation fee has been deducted, according to the following schedule:

<i>Period elapsed after instruction begins.</i>	<i>Percentage refundable</i>
Two weeks or less.....	80%
Between two and three weeks.....	60%
Between three and four weeks.....	40%
Between four and five weeks.....	20%
After five weeks.....	0

PRIZES

THE FACULTY PRIZE

The Faculty will award the Faculty Gold Medal and Certificate and five Certificates of Honor to six of the first ten highest ranking candidates for graduation who, during the four academic years, have exhibited outstanding qualifications for the practice of medicine.

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

A prize of \$25.00 is given each year by Mrs. A. Bradley Gaither as a memorial to the late Dr. A. Bradley Gaither, to the student in the senior class doing the best work in genito-urinary surgery.

THE WILLIAM D. WOLFE MEMORIAL PRIZE

(Value \$100.00 each)

A certificate of proficiency and a prize of \$100.00 will be awarded each year until the fund is dissipated, to the graduate selected by the Advisory Board of the Faculty showing greatest proficiency in Dermatology.

THE DR. LEONARD M. HUMMEL MEMORIAL AWARD

A gold medal and certificate of proficiency will be awarded annually, as a memorial to the late Dr. Leonard M. Hummel, to the graduate selected by the Advisory Board of the Faculty who has manifested outstanding qualifications in Internal Medicine.

SCHOLARSHIPS

All scholarships are assigned for one academic year, unless specifically reawarded on consideration of an application.

Official application forms are obtainable at the Dean's office, where they must be filed not later than May 15th for the ensuing academic year.

THE DR. SAMUEL LEON FRANK SCHOLARSHIP

(Value \$100.00)

This scholarship was established by Mrs. Bertha Rayner Frank as a memorial to the late Dr. Samuel Leon Frank, an alumnus of this university.

It is awarded by the Trustees of the Endowment Fund of the University each year upon nomination by the Advisory Board of the Faculty "to a medical student of the University of Maryland, who in the judgment of said Council, is of good character and in need of pecuniary assistance to continue his medical course."

This scholarship is awarded to a second, third or fourth year student who has successfully completed one year's work in this school. No student may hold this scholarship for more than two years.

THE CHARLES M. HITCHCOCK SCHOLARSHIPS

(Value \$100.00 each)

Two scholarships were established from a bequest to the School of Medicine by the late Charles M. Hitchcock, M.D., an alumnus of the university.

These scholarships are awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Advisory Board of the Faculty, to students who have meritoriously completed the work of at least the first year of the course in medicine, and who present to the Board satisfactory evidence of a good moral character and of inability to continue the course without pecuniary assistance.

THE RANDOLPH WINSLOW SCHOLARSHIP

(Value \$100.00)

This scholarship was established by the late Randolph Winslow, M.D., LL.D.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon nomination by the Advisory Board of the Faculty, to a "needy student of the Senior, Junior, or Sophomore Class of the Medical School."

"He must have maintained an average grade of 85% in all his work up to the time of awarding the scholarship."

"He must be a person of good character and must satisfy the Faculty Board that he is worthy of and in need of assistance."

THE DR. LEO KARLINSKY MEMORIAL SCHOLARSHIP
(Value \$125.00)

This scholarship was established by Mrs. Ray Mintz Karlinsky as a memorial to her husband, the late Dr. Leo Karlinsky, an alumnus of the university.

It is awarded annually by the Trustees of the Endowment Fund of the University, upon the nomination of the Advisory Board of the Faculty, to "a needy student of the Senior, Junior or Sophomore Class of the Medical School."

He must have maintained in all his work up to the time of awarding the scholarship a satisfactory grade of scholarship.

He must be a person of good character and must satisfy the Advisory Board that he is worthy of and in need of assistance.

THE CLARENCE AND GENEVRA WARFIELD SCHOLARSHIPS
(Value \$300.00 each)

There are five scholarships established by the regents from the income of the fund bequeathed by the will of Dr. Clarence Warfield.

Terms and Conditions: These scholarships are available to students of any of the classes of the course in medicine. Preference is given to students from the counties of the state of Maryland which the Advisory Board of the Faculty may from time to time determine to be most in need of medical practitioners.

Any student receiving one of these scholarships must agree, after graduation and a year's internship, to undertake the practice of medicine, for a term of two years, in the county to which the student is accredited, or in a county selected by the Board. In the event the recipient is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded by the student.

THE ISRAEL AND CECILIA E. COHEN SCHOLARSHIP
(Value \$150.00)

This scholarship was established by the late Eleanor S. Cohen in memory of her parents, Israel and Cecelia E. Cohen. Terms and conditions: This scholarship will be available to students of any one of the classes of the course in medicine; preference is given to students of the counties in the state of Maryland which the Advisory Board of the Faculty may from time to time determine to be most in need of medical practitioners. Any student receiving one of these scholarships must, after graduation and a year's internship, agree to undertake the practice of medicine for a term of two years in the county to which the student is accredited, or in a county selected by the council. In the event that a student is not able to comply with the condition requiring him to practice in the county to which he is accredited by the Board, the money advanced by the regents shall be refunded.

THE DR. HORACE BRUCE HETRICK SCHOLARSHIP
(Value \$250.00)

This scholarship was established by Dr. Horace Bruce Hetrick as a memorial to his sons, Bruce Hayward Hetrick and Augustus Christian Hetrick. It is to be awarded by the Advisory Board of the Faculty to a student of the senior class.

THE HENRY ROLANDO SCHOLARSHIP

(Value approximately \$250.00)

The Henry Rolando Scholarship was established by the Board of Regents of the University of Maryland from a bequest to the Board by the late Anne H. Rolando for the use of the Faculty of Medicine.

This scholarship will be awarded each academic year on the recommendation of the Advisory Board of the Faculty to a "poor and deserving student."

THE READ SCHOLARSHIPS

The sum of \$500.00 is now available to cover two (2) scholarships in the amount of \$250.00 each for a given academic year. Beginning in 1945, these scholarships were made possible by a donation from the Read Drug and Chemical Company of Baltimore, Maryland. Two students are to be selected by the Dean of the School of Medicine in collaboration with the Scholarship and Loan Committees of the Medical School with the provision that the students selected shall be worthy, deserving students, residents of the State of Maryland.

LOAN FUNDS

W. K. KELLOGG FUND

This loan fund was established in the academic year 1942 with money granted by the W. K. Kellogg Foundation. The interest paid on the loans, together with the principal of the fund as repaid, will be used to found a rotating loan fund. Loans will be made on the basis of need, character and scholastic attainment.

FACULTY OF MEDICINE LOAN FUND

A Faculty of Medicine Loan Fund was established with money derived from the bequest of Dr. William R. Sanderson, Class 1882, and the gift of Dr. Albert Stein, Class 1907 and a gift of Dr. Frank A. Merlino, Class 1928. Loans will be made on the basis of need, character, and scholastic ability.

THE EDWARD L. MEIERHOF LOAN FUND

This bequest was established through a grant from Dr. Edward L. Meierhof, who was graduated from the Medical School in 1881. The principal of this fund will be used as a rotating loan fund from which loans will be made to regularly enrolled students of the School of Medicine on the basis of need, character and scholastic attainment.

THE JAY W. EATON LOAN FUND

This fund was established by the local chapter of the Nu Sigma Nu Fraternity in memory of Jay W. Eaton of the class of 1946.

Beginning in 1946 an interest-free loan of \$100.00 will be made to some worthy member of the senior class, on recommendation of the Scholarship Committee of the School of Medicine. This loan is to be credited to the tuition fee of the appointed student and is to be repaid by the student within four years following his graduation.

THE SENIOR CLASS LOAN FUND

The senior class of 1945 originated this fund which will accumulate by subscription from among members of each senior class.

The conditions of the agreement provide that the dean of the School of Medicine award a loan of \$100.00 to a needy member of the senior class on the recommendation of a self-perpetuating committee of two members of the faculty.

Loans from this fund are to be credited to the tuition fee of the appointed student and are to be repaid within five years from the date of graduation.

THE WILLIAM AND SARAH KRAUT MEMORIAL STUDENT LOAN FUND

This loan fund was established in 1954 by a gift from Dr. Arthur M. Kraut as an expression of his appreciation for what the School of Medicine has meant to him and as a memorial to his parents.

The Scholarship and Loan Committee of the School of Medicine shall be the sole and final judge in matters of administration and operation of the fund.

Loans from the fund and the terms of repayment are unrestricted and are left to the discretion of the committee.

THE STUDENT AID FUND FOR SENIORS

This fund was originated by the class of 1950 and is sponsored by the senior class of each succeeding year. The purpose of the fund is to provide financial aid for any deserving member of the senior class. All members of the senior class are eligible to apply for a loan. Applications may be filed at the office of the dean.

The conditions of the agreement provide that the Scholarship and Loan Committee award loans to members of the senior class on recommendation of a self-perpetuating committee of two members of the faculty who may call on the president of the senior class for assistance, if desired.

Loans from this fund are made on a non-interest bearing basis and are payable within five years. A signed note is required. No co-signers are necessary.

ORGANIZATION OF THE CURRICULUM

The curriculum is organized under sixteen departments.

1. Anesthesiology.
2. Anatomy (including Histology, Embryology, and Neuro-anatomy).
3. Biological Chemistry.
4. Gynecology.
5. Medicine (including Medical Specialties).
6. Microbiology.
7. Obstetrics.
8. Ophthalmology.
9. Pathology.
10. Pediatrics.
11. Pharmacology.
12. Physiology.
13. Preventive Medicine and Rehabilitation.
14. Psychiatry.
15. Radiology.
16. Surgery (including Surgical Specialties).

The instruction is given in four academic years of graded work.

Several courses of study extend through two years or more, but in no case are the students of different years thrown together in the same course of teaching.

The first and second years are devoted largely to the study of the structures, functions and chemistry of the normal body. Laboratory work occupies most of the student's time during these two years.

Some introductory instruction in medicine and surgery is given in the second year. The third and fourth years are almost entirely clinical.

A special feature of instruction in the school is the attempt to bring together teacher and student in close personal relationship. In many courses of instruction the classes are divided into small groups and a large number of instructors insures attention to the requirements of each student.

In most courses the final examination as the sole test of proficiency has disappeared and the student's final grade is determined largely by partial examinations, recitations and assigned work carried on throughout the course.

ANESTHESIOLOGY

ROBERT B. DODD.....	Professor of Anesthesiology and Head of the Department
ALFRED T. NELSON.....	Clinical Professor of Anesthesiology
PAUL R. HACKETT.....	Associate Professor of Anesthesiology
OTTO C. PHILLIPS.....	Clinical Assistant Professor of Anesthesiology
HOWARD S. LIANG.....	Instructor in Anesthesiology
CHARLES F. HOBELMAN.....	Clinical Instructor in Anesthesiology
THEODORE E. STACY, JR.....	Clinical Instructor in Anesthesiology
LEONARD J. ABRAMOVITZ.....	Clinical Instructor in Anesthesiology
WALTER H. LEVY.....	Clinical Instructor in Anesthesiology
ELIZABETH Y. PAHK.....	Clinical Instructor in Anesthesiology

During the pre-clinical years and the third year, the department of Anesthesiology presents guest lectures. These lectures are intended to show the application of basic sciences to the clinical practice of anesthesiology and how the various facets of the clinical entity under discussion affect the choice of pre-anesthetic medication, the anesthetic agent and the technique to be employed.

Fourth Year—Each senior student will spend a week, or its time equivalent, in the operating rooms of University Hospital observing and administering anesthesia. Informal group meetings emphasize factors affecting the anesthetic management of patients observed and discuss the more common anesthetic problems of general practice.

ANATOMY

Gross Anatomy

FRANK H. J. FIGGE.....	Professor of Anatomy and Head of Department
EDUARD UHLENHUTH.....	Research Professor of Anatomy
WALLE J. H. NAUTA.....	Professor of Anatomy
VERNON E. KRAHL.....	Associate Professor of Anatomy
H. PATTERSON MACK.....	Assistant Professor of Anatomy
KARL F. MECH.....	Assistant Professor of Anatomy
THEODORE F. LEVEQUE.....	Assistant Professor of Anatomy
ROBERT E. McCAFFERTY.....	Instructor in Anatomy
GLADYS E. WADSWORTH.....	Instructor in Anatomy

Surgical Anatomy

OTTO C. BRANTIGAN.....	Professor of Surgical Anatomy
W. WALLACE WALKER.....	Associate Professor of Surgical Anatomy
WILLIAM B. SETTLE.....	Assistant Professor of Surgical Anatomy
HERBERT E. REIFSCHNEIDER.....	Associate in Surgical Anatomy
HARRY C. BOWIE.....	Associate in Surgical Anatomy
ROSS Z. PIERPONT.....	Associate in Surgical Anatomy

GROSS ANATOMY. *First year.* First semester. This course will give the student an opportunity to develop a basic concept of the Gross Anatomy and Gross Physiology of the human body as a prerequisite for other basic science and clinical subjects. It will be closely interwoven with the study of Neuroanatomy, Histology, and Embryology. The entire human body will be dissected. The central nervous system dissection and study will, however, be carried out during the time scheduled for Neuroanatomy. 240 hours.

HISTOLOGY AND EMBRYOLOGY. *First Year.* First Semester. The Microscopic Structure of the Organs, Tissues and Cells of the Human Body.

This course will present an integrated study of the histology and embryology of the human body.

An attempt will be made to correlate this with gross anatomy as well as other subjects in the medical curriculum. Special emphasis will be placed on the dynamic and functional aspects of the subject. 135 hours.

NEUROANATOMY. *First Year.* First Semester. The Central Nervous System. The study of the detailed anatomy of the central nervous system will be coordinated with the structure and function of the entire nervous system. This study will

require the dissection of a human brain and the examination of stained microscopic sections of various levels of the brain stem. 90 hours.

SURGICAL ANATOMY. *Second Year.* Second Semester. Applied Clinical and Surgical Anatomy. The course is designed to bridge the gap between abstract anatomy and clinical anatomy as applied to the study and practice of medicine and surgery. The study of surface anatomy is correlated with physical diagnosis. The students have an opportunity to do a detailed anatomical dissection with emphasis upon clinical application. 96 hours. Dr. Brantigan and Staff.

GRADUATE AND POSTGRADUATE COURSES. Consult the general catalog or Graduate School catalog of the University of Maryland for descriptions of these courses.

ART AS APPLIED TO MEDICINE

CARL DAME CLARKE	Associate Professor of Art as Applied to Medicine
THOMAS M. STEVENSON, JR.	Junior Instructor in Art as Applied to Medicine
JANE L. BLEAKLEY	Assistant in Art as Applied to Medicine
GARNET E. AFFLECK, JR.	Assistant in Art as Applied to Medicine

This department is maintained for the purpose of supplying pictorial and plastic illustrations for visual teaching in the classrooms of the medical school and for publication in scientific periodicals. This also includes the preparation of illustrations for use in public relations, drawings, paintings, photography, cinematography, lithography and moulage. Research in prosthetics and the production of prosthetic appliances are also carried out in this department.

Special courses of instruction are given to qualified students.

BIOLOGICAL CHEMISTRY

EMIL G. SCHMIDT	Professor of Biological Chemistry and Head of the Department
EDWARD J. HERBST	Associate Professor of Biological Chemistry
RAYMOND E. VANDERLINDE	Associate Professor of Biological Chemistry
WILLIAM H. SUMMERSON	Lecturer in Biological Chemistry
ANN VIRGINIA BROWN	Instructor in Biological Chemistry
ELEANOR B. GLINOS	Research Assistant in Biological Chemistry
FLO MOHR COUNCELL	Research Assistant in Biological Chemistry
ELIZABETH R. L. SHAW	Research Assistant in Biological Chemistry
ARLIE BIEMILLER	Research Assistant in Biological Chemistry
ROBERT H. WEAVER	Fellow in Biological Chemistry
DONALD HELINISKI	John F. B. Weaver Fellow in Biological Chemistry
DONALD KEISTER	Fellow in Biological Chemistry

First Year. Second Semester. This course is designed to present the principles of biological chemistry and to indicate their applications to the clinical aspects of medicine. The phenomena of living matter and its chief ingredients, secretions and excretions are discussed in lectures and conferences and examined experimentally. Training is given in biochemical methods of investigation. Total hours: 208.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

BIOSTATISTICS

Refer to the Department of Preventive Medicine and Rehabilitation for a description of this course.

CARDIOLOGY [A DIVISION OF MEDICINE]

WILLIAM S. LOVE.....	Professor of Clinical Medicine and Chief, Division of Cardiology
EDWARD C. LEACH.....	Assistant Professor of Medicine and Chief, Adult Cardiology Outpatient Clinic
SIDNEY SCHERLIS.....	Assistant Professor of Medicine and Chief, Pediatric Cardiology Outpatient Clinic
LEONARD SCHERLIS.....	Assistant Professor of Medicine
WILFRED H. TOWNSHEND.....	Associate in Medicine
STEPHEN VAN LILL, III.....	Associate in Medicine
KYLE W. SWISHER.....	Associate in Medicine
AUBRY RICHARDSON.....	Trainee in Cardiology
KARL H. WEAVER.....	Trainee in Cardiology

First and Second Years. Lectures and demonstrations in the Electrical Activity of the Heart in collaboration with the Department of Physiology.

Third Year. Conferences, clinics and Outpatient work in Cardiology. Consultation rounds in conjunction with medical clinical clerkships.

Fourth Year. Weekly consultation conference concerning diagnosis, treatment and special diagnostic techniques in Cardiology. Senior students participate in the Cardiology Outpatient Clinic for four weeks.

Elective Course in Graphic Studies of the Heart. Instruction in electrocardiography, spatial vectorcardiography, principles of catheterization of the heart and angiocardiology. 20 hours.

Summer Fellowships. Junior students may work as Fellows in Cardiology during the summer months, participating in special cardiac studies (catheterization, angiocardiology, electrocardiography, etc) and in current research. Application should be made to the Chief of the Section prior to January 1.

Traineeships in Cardiology. These are available to selected postgraduate applicants. The Trainee participates in the activities of the Section and receives a financial stipend. Application is made through the Chief of the Section in October. The Traineeship begins the first of the following July.

CARDIO-PULMONARY PHYSIOLOGY [A DIVISION OF SURGERY]

R. ADAMS COWLEY.....	Director
HARRIET M. DIVER.....	Technician
FRIEDA RUDO.....	Technical Consultant
GEORGE SCHIMERT.....	Fellow in Cardiovascular and Experimental Surgery
JOHN M. ALLEN.....	Fellow in Surgery

A laboratory organized for the study and investigation of physiological processes involved in Cardiovascular and Pulmonary diseases.

Postgraduate instruction is available in the techniques of cardiac catheterization, pulmonary function studies, angiocardiology and aortography. Com-

bined with this instruction, there are also opportunities for further study of these problems in the field of experimental surgery under the direction of Drs. Yeager and Cowley.

CLINICAL PATHOLOGY [A DIVISION OF MEDICINE]

MILTON S. SACKS.....	Professor of Clinical Medicine and Chief, Division of Clinical Pathology; Director, Clinical Laboratories, University Hospital
MARIE A. ANDERSCH.....	Professor of Biochemistry in Medicine; Assistant Director Clinical Laboratories, University Hospital
CARROL L. SPURLING.....	Assistant Professor of Medicine; Assistant Director Clinical Laboratories, University Hospital
JOHN B. DEHOFF.....	Associate in Medicine
STANLEY MILLER.....	Associate in Medicine
L. ANN HELLEN.....	Instructor in Medicine
AUDRY M. FUNK.....	Instructor in Medicine
BENJAMIN ROTHFELD.....	Assistant in Medicine
SHERWOOD MILLER.....	Fellow in Medicine
GIOVANNI RACCUGLIO.....	Instructor in Medicine
ALICE M. BAND.....	Instructor in Medicine
FRANCES S. BARBUSCA.....	Research Assistant in Clinical Pathology

Second Year. First and Second Semester: The course is designed to train the student in the performance and interpretation of the fundamental laboratory procedures used in clinical diagnosis. During the first semester the basic techniques of hematology as well as clinical aspects of blood diseases are taught. Blood group immunology in relation to transfusion is also covered. In the second semester the performance and interpretation of tests used in the diagnosis of renal, hepatic, gastric, pancreatic, and metabolic diseases are considered. A review, with clinical applications, of acid-base balance and electrolyte disturbances is included. Methods of examination of cerebro-spinal fluid, transudates and exudates are taught. Elements of clinical parasitology complete the work in this semester.

Each student provides his own microscope and blood counting equipment. A completely equipped locker is provided for each student. Total hours: 128.

Third Year. Seminar discussions of diagnostic laboratory procedures in selected diseases are given during the medicine quarter. Each student is assigned a completely equipped locker adjacent to the wards for use during the clinical clerkships. Microscope and blood counting equipment must be provided by the student.

Fourth Year. During the medicine quarter, students attend a weekly hematology conference when patients from the hospital wards with blood diseases are discussed.

Student Fellowships. Two (2) voluntary summer fellowships are available for sophomore or junior medical students who wish to perform advanced work in hematology. These afford an opportunity for clinical work in hematology as well

as investigative experience. Work may be continued during the school year if time is available. Application should be made to the head of this division by January of the current school year.

Graduate Fellowships. Two (2) full time clinical and research fellowships in hematology are available to applicants who have had a minimum of one year internship. A financial stipend is provided. Application should be made to the Head of the Division.

DENTISTRY

[A DIVISION OF SURGERY]

¹ BRICE M. DORSEY	Professor of Oral Surgery
¹ MYRON S. AISENBERG	Professor of Pathology
¹ JOSEPH C. BIDDIX, JR.	Professor of Oral Diagnosis
¹ KYRLE W. PREIS	Professor of Orthodontics
¹ HARRY M. ROBINSON, SR.	Professor of Dermatology
¹ GRAYSON W. GAVER	Professor of Dental Prosthesis
¹ ERNEST B. NUTTALL	Professor of Crown and Bridge
¹ KENNETH V. RANDOLPH	Professor of Operative Dentistry
¹ EDWARD C. DOBBS	Professor of Pharmacology
GEORGE H. YEAGER	Professor of Clinical Surgery
¹ JOSEPH P. CAPPUCCIO	Instructor in Oral Surgery
¹ CONRAD L. INMAN	Instructor in Anesthesiology

¹ Faculty Member, School of Dentistry.

This section has been reorganized for the teaching of both medical and dental students. There has been established a division in the out-patient department, and beds will be provided in the University Hospital, for the care of patients who will be available for the teaching of students from both schools.

Senior year: clinics weekly.

Ward instruction and group teaching are given. This includes diagnosis and treatment of diseases of the face, mouth and jaws.

DERMATOLOGY AND SYPHILOLOGY [A DIVISION OF MEDICINE]

HARRY M. ROBINSON, JR.	Professor of Dermatology and Chief, Division of Dermatology
FRANCIS A. ELLIS	Associate Professor of Dermatology
EUGENE S. BERESTON	Assistant Professor of Dermatology
A. ALBERT SHAPIRO	Assistant Professor of Dermatology
ISRAEL ZELIGMAN	Assistant Professor of Dermatology
R. C. V. ROBINSON	Assistant Professor of Dermatology
WILLIAM R. BUNDICK	Associate in Dermatology
MARK B. HOLLANDER	Associate in Dermatology
MORRIS M. COHEN	Associate in Dermatology
DAVID BACHARACH	Instructor in Dermatology
LEE R. LERMAN	Assistant in Dermatology
STANLEY N. YAFFE	Research Assistant in Dermatology
JACOB LUDWIG	Assistant in Dermatology

First Year. During the first year, two hours of lecture-demonstration are devoted to the cutaneous manifestations of systemic diseases as a part of the elementary course in the Introduction to Medicine.

Second Year. During the second year students receive a one hour lecture on industrial dermatology and one hour on congenital abnormalities.

Third Year. Students are given assigned reading on the more common skin eruptions. Lectures are avoided. Six two hour clinical sessions are held for each quarter of the junior class. Individual instruction is given by one of the senior members of the staff in the minutiae necessary to establish a diagnosis.

Fourth Year. Groups of twelve students spend twenty hours in the Out-Patient Department where they are given individual instruction in the diagnosis and treatment of cutaneous lesions. Emphasis is laid on the relationship of various eruptions to systemic conditions. Instruction is given in mycologic technique.

GASTRO-ENTEROLOGY [A DIVISION OF MEDICINE]

WM. CARL EBELING, III.	Assistant Professor of Medicine, and Head of the Division of Gastroenterology
THEODORE E. MORRISON	Clinical Professor of Gastro-enterology
SAMUEL MORRISON	Associate Professor of Gastro-enterology
MAURICE FELDMAN	Assistant Professor of Gastro-enterology
ZACHARIAH MORGAN	Assistant Professor of Gastro-enterology
Z. VANCE HOOPER	Associate in Gastro-enterology
ALBERT J. SHOCHAT	Instructor in Gastro-enterology
PHILIP D. FLYNN	Instructor in Gastro-enterology
JOAN W. LITTLE	Research Assistant in Gastro-enterology

Second Year. Lectures are given as part of the course in correlative medicine.

Third Year. Lectures and clinics on specific gastro-intestinal diseases under the sponsorship of the Department of Medicine.

Fourth Year. Weekly clinics or conferences are held on gastro-intestinal subjects and problems. There are weekly peroral endoscopic clinics. Students assist in the out-patient clinic. Opportunities are available for practical experience in exfoliative cytology.

Summer Fellowships. Junior students may work as fellows, receiving instruction in clinical practice, endoscopy, special diagnostic techniques and therapy.

GYNECOLOGY

J. MASON HUNDLEY, JR.	Professor of Gynecology and Head of the Department
ERNEST I. CORNBROOKS, JR.	Associate Professor of Gynecology
WILLIAM K. DIEHL	Assistant Professor of Gynecology
EVERETT S. DIGGS	Assistant Professor of Gynecology
BEVERLEY C. COMPTON	Assistant Professor of Gynecology
LEO BRADY	Assistant Professor of Gynecology
EDWARD P. SMITH	Assistant Professor of Gynecology
FRANK K. MORRIS	Assistant Professor of Gynecology
THEODORE KARDASH	Associate in Gynecology
JOHN J. ERWIN	Associate in Gynecology
WILLIAM A. DODD	Associate in Gynecology
W. ALLEN DECKERT	Instructor in Gynecology
WILLIAM C. DUFFY	Instructor in Gynecology
HARRY F. KANE	Instructor in Gynecology

HELEN I. MAGINNIS.....	Instructor in Gynecology
JAMES H. SHELL, JR.....	Assistant in Gynecology
F. X. PAUL TINKER.....	Assistant in Gynecology
NORMAN LEVIN.....	Assistant in Gynecology
RAYMOND L. MARKLEY.....	Assistant in Gynecology
GEORGE A. MAXWELL.....	Assistant in Gynecology
GEORGE L. EAVEY.....	Assistant in Gynecology
BENSON C. SCHWARTZ.....	Assistant in Gynecology
F. SIDNEY GARDNER.....	Assistant in Gynecology
EDWARD C. PREVOST.....	Assistant in Gynecology
THOMAS A. STEBBINS.....	U.S.P.H.S., Cancer Teaching Fund Medical Illustrator in Oncology and Gynecology

Third Year. A comprehensive course of 30 lectures in the field of gynecology, female urology, and female oncology is given to the entire class.

Fourth Year. An intensive course is given to small groups of students throughout the year, during which time the students are assigned exclusively to this department. The course consists of instructions including lectures, seminars, ward rounds, and operative clinics. In addition, two special instruction periods are given in pathology at which time a review of the pathological material seen at operation is made with especial reference to the pathology of malignant disease. The students are assigned patients on the gynecological wards, and also work in the gynecological, cystoscopy and oncology, out-patient departments each day.

Third year.....	30 hours
Fourth year.....	75 hours
Total:	105 hours

HISTORY OF MEDICINE

LOUIS A. M. KRAUSE.....	Professor of Clinical Medicine
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Beginning with the spring of 1942 a group of lectures on the history of medicine has been presented on selected phases and trends of the development of medical knowledge and practice. It is planned to avoid duplication of subject matter for at least four years.

These lectures are offered primarily for our students, but a cordial invitation is extended to anyone who may wish to attend.

Announcement of the lectures will be made by mail and on the bulletin board of the School of Medicine.

HYPERTENSION

[A DIVISION OF MEDICINE]

SAMUEL T. R. REVELL, JR.....	Associate Professor of Medicine and Chief, Division of Hypertension
FRANCIS J. BORGES.....	Instructor in Medicine and Assistant Chief, Division of Hypertension
R. ADAMS COWLEY.....	Director Cardio-Pulmonary Service; Collaborator in evaluation of Sympatho-Adrenal Surgery for Hypertension

Third Year. Elective conferences on pathological-physiology of hypertension, sites of action of anti-hypertensive drugs, methods of screening patients with hypertension, choice of therapy in hypertensive patients.

Fourth Year. Elective weekly hypertension clinics and attendance at hypertensive weekly rounds.

Summer Fellowships. Junior students may work as fellows, receiving instruction in the clinical management of patients, techniques of renal function studies and special research procedures.

INFECTIOUS DISEASES [A DIVISION OF MEDICINE]

ROBERT T. PARKER.....	Assistant Professor of Medicine and Chief, Division of Infectious Diseases
MERRILL J. SNYDER.....	Assistant Professor of Medicine in Clinical Microbiology
SZE-JUI LIU.....	Instructor in Medicine

Second Year. Lectures are given on viral and rickettsial diseases and certain diseases caused by gram negative bacteria in collaboration with instruction in general bacteriology.

Third Year. Lectures and clinics on specific infectious diseases are presented under the sponsorship of the Department of Pathology and the Department of Medicine.

Fourth Year. Students attend weekly conferences on subjects related to infectious diseases. These sessions comprise consultation rounds on infectious disease problems and practical instruction in the diagnostic methods applicable to the infectious diseases. Opportunities are available for practical instruction in laboratory techniques.

Summer Fellowships. Junior students have the opportunity to work as Fellows in Infectious Diseases during the summer months. Instruction is provided in laboratory techniques including the handling of viral and rickettsial agents of disease, general bacteriological and immunologic techniques, bioassay of antibiotics and ward instruction including chemotherapy. Application should be made to the Chief of Section prior to January of the current school year.

Post-Graduate Fellowships. The Section of Infectious Diseases sponsors a Fellow who receives instruction in laboratory techniques and clinical investigation. Fellows participate in all functions of the Section including collaboration in investigative problems. A financial stipend is provided. Application is made through the Chief of the Section.

INDUSTRIAL MEDICINE AND SURGERY [A DIVISION OF SURGERY]

CHARLES A. REIFSCHEIDER.....	Clinical Professor of Traumatic Surgery
THURSTON R. ADAMS.....	Assistant Professor of Surgery

This section is under the combined supervision of the medical and surgical departments. It is a cooperative effort by members of the medical school and hospital staff to afford means for clinical and laboratory study of the patient who has been subjected to traumatic or medical industrial hazard, so that adequate

care may be instituted to promote his physical well-being. The facilities of the laboratories of the medical school and hospital are available as required.

Under direction of this department limited undergraduate instruction is given, especially in the methods of examination and of keeping records and in the general medico-legal principles as they affect the industrial employee, the employer, the general insurers, the physician and the hospital. There is also instruction on methods of making life insurance and other physical examinations, whether for employment or for health purposes. The wards of the University, Mercy and Baltimore City Hospitals provide for bed-side instruction.

Total hours: 8.

LEGAL MEDICINE [A DIVISION OF MEDICINE]

RUSSELL S. FISHER.....	Professor of Legal Medicine and Chief, Division of Legal Medicine
HENRY C. FREIMUTH.....	Assistant Professor of Legal Medicine
WILLIAM V. LOVITT, JR.....	Assistant Professor of Legal Medicine
RICHARD LINDENBERG.....	Associate in Legal Medicine
PAUL F. GUERIN.....	Associate in Legal Medicine
ELLA FREYTAG.....	Research Assistant in Legal Medicine
SIDNEY KATZ.....	Research Fellow in Legal Medicine
CHARLES B. WHEELER.....	Research Fellow in Legal Medicine

Third Year. This course embraces a summary of medical jurisprudence including the laws governing the practice of medicine, industrial compensation and malpractice, proceedings in criminal and civil prosecution, medical evidence and testimony, identification of bodies, injuries by blunt force, gunshot and other mechanisms, natural and homicidal deaths, medicolegal toxicology and the medico-legal autopsy. (12 hours.)

Fourth Year. The division arranges a series of lectures covering medical ethics, economics, record keeping, residency training opportunities and some considerations about starting in private practice. An attempt is made in this series to stress those features which will be immediately useful business-wise to the young physician (7 hours).

Elective Course (summer). A small number of students may upon application be assigned to elective work in the laboratory of the Chief Medical Examiner of the State of Maryland.

MEDICINE

THEODORE E. WOODWARD.....	Professor of Medicine and Head of the Department
T. NELSON CAREY.....	Professor of Clinical Medicine
H. RAYMOND PETERS.....	Professor of Clinical Medicine
LOUIS A. M. KRAUSE.....	Professor of Clinical Medicine
WILLIAM S. LOVE, JR.....	Professor of Clinical Medicine
RUSSELL FISHER.....	Professor of Legal Medicine
CHARLES VAN BUSKIRK.....	Professor of Neurology
HARRY M. ROBINSON, JR.....	Professor of Dermatology
HOWARD M. BUBERT.....	Associate Professor of Medicine
J. SHELDON EASTLAND.....	Associate Professor of Medicine

MILTON S. SACKS.....	Associate Professor of Medicine
LEWIS P. GUNDRY.....	Associate Professor of Medicine
SAMUEL MORRISON.....	Associate Professor of Medicine
HENRY J. L. MARRIOTT.....	Associate Professor of Medicine
H. VERNON LANGELOTTIG.....	Associate Professor of Medicine
EDWARD F. COTTER.....	Associate Professor of Medicine
EPHRAIM T. LISANSKY.....	Associate Professor of Medicine
SAMUEL T. R. REVELL, JR.....	Associate Professor of Medicine
GEORGE S. MIRICK.....	Associate Professor of Medicine
WILLIAM H. SMITH.....	Associate Professor of Clinical Medicine
MARIE A. ANDERSCH.....	Associate Professor of Biochemistry in Medicine
GEORGE MCLEAN.....	Assistant Professor of Medicine
WETHERBEE FORT.....	Assistant Professor of Medicine
FRANK J. GERAGHTY.....	Assistant Professor of Medicine
SOL SMITH.....	Assistant Professor of Medicine
C. EDWARD LEACH.....	Assistant Professor of Medicine
ROBERT A. REITER.....	Assistant Professor of Medicine
SIDNEY SCHERLIS.....	Assistant Professor of Medicine
JAMES R. KARNS.....	Assistant Professor of Medicine
ROBERT T. PARKER.....	Assistant Professor of Medicine
MERRILL J. SNYDER.....	Assistant Professor of Medicine in Clinical Bacteriology
SAMUEL LEGUM.....	Assistant Professor of Medicine
EDMUND G. BEACHAM.....	Assistant Professor of Medicine
MEYER W. JACOBSON.....	Assistant Professor of Medicine
S. EDWIN MULLER.....	Assistant Professor of Medicine
LAURENCE M. SERRA.....	Assistant Professor of Medicine
FRANCIS C. DICKEY.....	Assistant Professor of Medicine
WILLIAM CARL EBELING, III.....	Assistant Professor of Medicine
JOSEPH B. WORKMAN.....	Assistant Professor of Medicine
JOHN G. WISWELL.....	Assistant Professor of Medicine
CARROL L. SPURLING.....	Assistant Professor of Medicine
FRANCIS P. CHINARD.....	Assistant Professor of Medicine
DOUGLAS G. CARROLL.....	Assistant Professor of Medicine
W. GRAFTON HERSPBERGER.....	Associate in Medicine
CONRAD B. ACTON.....	Associate in Medicine
WILLIAM K. WALLER.....	Associate in Medicine
ARTHUR KARFGIN.....	Associate in Medicine
M. PAUL BYERLY.....	Associate in Medicine
KURT LEVY.....	Associate in Medicine
WILFRED H. TOWNSHEND.....	Associate in Medicine
ALVIN J. HARTZ.....	Associate in Medicine
LOUIS V. BLUM.....	Associate in Medicine
LEON ASHMAN.....	Associate in Medicine
DANIEL WILFSON, JR.....	Associate in Medicine
JONAS COHEN.....	Associate in Medicine
WALTER KARFGIN.....	Associate in Medicine
IRVING FREEMAN.....	Associate in Medicine
J. EMMET QUEEN.....	Associate in Medicine
JOHN B. DEHOFF.....	Associate in Medicine
JOSEPH FURNARI.....	Associate in Medicine
STEPHEN J. VAN LILL, III.....	Associate in Medicine

LEONARD SCHERLIS.....	Associate in Medicine
WILLIAM F. COX, III.....	Associate in Medicine
DONALD W. MINTZER.....	Associate in Medicine
WILLIAM G. HELFRICH.....	Associate in Medicine
STANLEY MILLER.....	Associate in Medicine
JEROME SHERMAN.....	Associate in Medicine
JAMES T. MARSH.....	Lecturer in Medicine
PHILIP D. FLYNN.....	Instructor in Medicine
JOHN A. MYERS.....	Instructor in Medicine
JOSEPH E. MUSE.....	Instructor in Medicine
WILLIAM H. KAMMER, JR.....	Instructor in Medicine
SAMUEL J. HANKIN.....	Instructor in Medicine
FREDERICK J. VOLLMER.....	Instructor in Medicine
JOHN R. DAVIS.....	Instructor in Medicine
L. ANN HELLEN.....	Instructor in Medicine
AUDREY M. FUNK.....	Instructor in Medicine
LEON A. KOCHMAN.....	Instructor in Medicine
C. HERMAN WILLIAMS.....	Instructor in Medicine
ELIZABETH D. SHERRILL.....	Instructor in Medicine
BERNARD BURGIN.....	Instructor in Medicine
LAURISTON L. KEOWN.....	Instructor in Medicine
FRANKLIN E. LESLIE.....	Instructor in Medicine
PHILIP D. FLYNN.....	Instructor in Medicine
STUART D. SUNDAY.....	Instructor in Medicine
IRVIN B. KEMICK.....	Instructor in Medicine
MAURICE FELDMAN, JR.....	Instructor in Medicine
CHARLES E. SHAW.....	Instructor in Medicine
JOHN C. OSBORNE.....	Instructor in Medicine
EDWARD S. KALLINS.....	Instructor in Medicine
JOSEPH C. MATCHAR.....	Instructor in Medicine
MARVIN GOLDSTEIN.....	Instructor in Medicine
B. STANLEY COHEN.....	Instructor in Medicine
GIOVANNI RACCUGLIO.....	Instructor in Medicine
SHELDON E. GREISMAN.....	Instructor in Experimental Medicine
KYLE Y. SWISHER, JR.....	Instructor in Medicine
BENNETT L. ELISBERG.....	Instructor in Experimental Medicine
PATRICIA A. ELISBERG.....	Assistant Instructor in Experimental Medicine
ALICE BAND.....	Instructor in Medicine
FRANCIS J. BORGES.....	Instructor in Medicine
RAYMOND M. LAUER.....	Assistant in Medicine
JACK WEXLER.....	Assistant in Medicine
JOSEPH C. MYERS.....	Assistant in Medicine
THOMAS WORSLEY.....	Assistant in Medicine
STEPHEN L. MAGNESS.....	Assistant in Medicine
STANLEY R. STEINBACH.....	Assistant in Medicine
FRANK K. KASIK.....	Assistant in Medicine
DONALD J. ROOP.....	Assistant in Medicine
WILLIAM H. GRENZER.....	Assistant in Medicine
E. ELLSWORTH COOK, JR.....	Assistant in Medicine
FRANK G. KUEHN.....	Assistant in Medicine
WILLIAM S. SPICER.....	Assistant in Medicine

ANDERS W. ANDERSON.....	Assistant in Medicine
MARION FRIEDMAN.....	Assistant in Medicine
BENJAMIN ROTHFELD.....	Assistant in Medicine
STANLEY N. YAFFE.....	Research Assistant in Dermatology
JACOB LUDWIG.....	Assistant in Dermatology
BARNETT BERMAN.....	Assistant in Medicine
AUBREY D. RICHARDSON.....	Trainee in Cardiology
KARL H. WEAVER.....	Trainee in Cardiology
SIDNEY KATZ.....	Research Fellow in Legal Medicine
FRANK G. KUEHN.....	Trainee in Metabolism
SZE-JUI LIU.....	Fellow in Medicine
SHERWOOD MILLER.....	Fellow in Medicine
CHARLES B. WHEELER.....	Research Fellow in Legal Medicine

FIRST YEAR

Beginning with the second semester, a lecture course in "Biological Aspects of Man" is presented which continues until termination of the second year. In the first year, the course comprises instruction in the introduction to medicine, two hours weekly during the second semester. This course is interdepartmental and stresses the broad application of anatomy, histology, embryology, biochemistry and physiology to the clinical sciences.

SECOND YEAR

Introduction to Clinical Medicine: A. "Biological Aspects of Man" as correlative medicine (two hours weekly throughout the year.) This course in conjoint medicine emphasizes the technique of history taking and the pathologic-physiology in medicine, surgery, pediatrics, psychiatry, obstetrics and sub-specialties. B. Physical Diagnosis: Practical instruction in physical diagnosis two hours weekly, second semester.

During the summer months, sophomore students are urged to participate in the activities of the medical Out-Patient Department where practical instruction is provided in history taking and physical diagnosis. Students are given library assignments which are formally reported to members of the medical staff.

THIRD YEAR

The Practice of Medicine: A. Clinical Clerkship for 8 weeks on the medical wards of the University Hospital. Responsibility under supervision for the history, physical examination, laboratory examination and progress notes of assigned cases. B. Ward rounds and conferences in general medicine. C. Clinical pathological conference and interdepartmental seminar once weekly. D. Baltimore City Hospital is utilized for teaching in the third year. For a period of 8 weeks, the student performs outpatient work in general medicine three mornings weekly. Practical instruction is provided in physical diagnosis as related to chronic disease, tuberculosis, neurology and roentgen diagnosis. A weekly clinic is given in general medicine and tuberculosis.

The Principles of Medicine: A. A course in guided reading is conducted throughout the junior year consisting of assignments in standard texts and current periodicals. B. Lectures are given weekly in neurology and legal medicine throughout the junior year.

FOURTH YEAR

Advanced Practice of Medicine: A. Clinical clerkship on the medical wards of Mercy Hospital for 4 weeks. B. Ward classes, ward rounds and conferences in general medicine, the medical subspecialties and therapeutics for 4 weeks at University Hospital. C. Consultation rounds daily for 4 weeks on wards of University Hospital in problems of cardiology, infectious diseases, gastroenterology, neurology, hematology and pulmonary diseases. D. Outpatient experience work for 4 weeks under supervision in medicine and medical specialties in the Outpatient Department of the University Hospital. E. Clinical pathological conference and interdepartmental seminars weekly.

SUMMER CLERKSHIPS

Junior students have the opportunity to work as clinical clerks during the summer term. Responsibility under supervision for the history, physical examination, laboratory examination and progress notes of assigned cases.

Certain of the medical sub-specialty divisions provide specialized training for junior students as a fellow or trainee during the summer months. The applicant is encouraged to apply directly to the division head.

POSTGRADUATE FELLOWSHIPS

Postgraduate fellowships are available in various of the subspecialties of medicine (see specific Sections).

MICROBIOLOGY

CHARLES L. WISSEMAN, JR.....	Professor of Microbiology and Head of the Department
EDWARD STEERS.....	Associate Professor of Microbiology
ANDREW G. SMITH.....	Assistant Professor of Microbiology
H. EDMUND LEVIN.....	Associate in Microbiology
MERRILL J. SNYDER.....	Instructor in Microbiology
ELIZABETH C. HEINZ.....	Junior Instructor in Microbiology
NORMA MARY KEIGLER.....	Bressler Reserve Fund Research Fellow in Microbiology
ROBERT C. WOOD.....	U. S. Navy Research Fellow in Microbiology

Second Year. First Semester. The principles of general bacteriology are taught by quiz, conference, and lecture.

Instruction given in the laboratory includes the methods of preparation of culture media, the study of pathogenic bacteria, and the bacteriological examination of water and milk. The bacteriological diagnosis of communicable diseases is also included.

Second Year. Second Semester. The principles of immunology are presented by means of quizzes, conferences and lectures.

The course includes a consideration of infection and immunity, the nature and

action of the various antibodies, complement fixation and flocculation tests, hypersensitiveness, and the preparation of bacterial vaccines.

Experiments are carried out by the class in the laboratory. During the latter half of the semester the class is divided into sections.

Total hours: Bacteriology 150.

Immunology 72.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

NEUROLOGICAL SURGERY [A DIVISION OF SURGERY]

JAMES G. ARNOLD, JR.....Professor of Neurological Surgery and Head of the Division

RICHARD G. COBLENTZ.....Professor of Clinical Neurological Surgery

JOHN A. WAGNER.....Associate Professor of Pathology and Neuropathology

RAYMOND K. THOMPSON.....Assistant Professor of Neurological Surgery

ROBERT OSTER

Associate in Electro-physiology, and Director of the Hoffberger Electroencephalographic Laboratory

ROBERT M. N. CROSBY.....Associate in Neurological Surgery

WILLIAM H. MOSBERG, JR.....Associate in Neurological Surgery

FRANK J. OTENASEK.....Instructor in Neurological Surgery

JOHN W. CHAMBERS.....Instructor in Neurological Surgery

AUGUST KIEL, JR.....Instructor in Neurological Surgery

JOHN O. SHARRETT.....Assistant in Neurological Surgery

Third Year. This course comprises lectures and demonstrations in the fundamentals of neurological surgery. Total hours, twelve.

Fourth Year. Weekly ward rounds at the University and Mercy Hospitals. Total hours, sixteen.

Dispensary Instruction. A small number of students may apply for instruction in the neurological out-patient department.

NEUROLOGY [A DIVISION OF MEDICINE]

CHARLES VAN BUSKIRK.....Professor of Neurology and Chief, Division of Neurology

PHILIP F. LERNER.....Assistant Professor of Neurology

HARRY TEITELBAUM.....Assistant Professor of Neurology

GEORGE G. MERRILL.....Assistant Professor of Neurology

WILLIAM L. FEARING.....Associate in Neurology

EDWARD F. COTTER.....Associate in Neurology

Second Year. Fifteen one-hour lectures are given to correlate the anatomy and physiology of the nervous system with clinical neurology.

Third Year. Fourteen lectures demonstrations are given in which the major types of the diseases of the nervous system are discussed. In addition, eight two-hour periods are presented to smaller groups of students at the Baltimore City Hospitals during which the students examine and discuss selected cases which illustrate the chief neurological syndrome.

Fourth Year. While in the medical section students attend consultation rounds

once a week and a case conference once a week during their rotation through Mercy Hospital. At the University Hospital the students attend a case conference once a week.

Dispensary Instruction. Small groups of students are instructed in the neurological dispensary at Mercy Hospital two afternoons each week and at the University dispensary once a week.

OBSTETRICS

ARTHUR LYMAN HASKINS.....	Professor of Obstetrics and Head of the Department
J. MORRIS REESE.....	Associate Professor of Obstetrics
D. FRANK KALTREIDER.....	Associate Professor of Obstetrics
ISADORE A. SIEGEL.....	Associate Professor of Obstetrics
JOHN E. SAVAGE.....	Assistant Professor of Obstetrics
HUGH B. McNALLY.....	Assistant Professor of Obstetrics
MARGARET B. BALLARD.....	Associate in Obstetrics
D. McCLELLAND DIXON.....	Associate in Obstetrics
OSBORNE C. CHRISTENSEN.....	Associate in Obstetrics
J. TYLER BAKER.....	Associate in Obstetrics
J. HUFF MORRISON.....	Associate in Obstetrics
GEORGE H. DAVIS.....	Associate in Obstetrics
J. KING B. E. SEEGAR.....	Associate in Obstetrics
LOUIS C. GAREIS.....	Associate in Obstetrics
KENNETH B. BOYD.....	Assistant in Obstetrics
W. KENNETH MANSFIELD, JR.....	Assistant in Obstetrics
THEODORE KARDASH.....	Assistant in Obstetrics
HARRY MCB. BECK.....	Assistant in Obstetrics
WILLIAM A. DODD.....	Assistant in Obstetrics
IRVIN P. KLEMKOWSKI.....	Assistant in Obstetrics
CLARENCE W. MARTIN.....	Assistant in Obstetrics
VERNON C. KELLEY.....	Assistant in Obstetrics
HARRY COHEN.....	Assistant in Obstetrics
THOMAS C. WEBSTER.....	Assistant in Obstetrics
VINCENT DeP. FITZPATRICK.....	Assistant in Obstetrics
ERNEST SCHER.....	Assistant in Obstetrics
JAMES H. SHELL, JR.....	Assistant in Obstetrics
F. X. PAUL TINKER.....	Assistant in Obstetrics
DANIEL EHRLICH.....	Assistant in Obstetrics
WILLIAM D. GENTRY.....	Assistant in Obstetrics
NORMAN LEVIN.....	Assistant in Obstetrics
GEORGE A. MAXWELL.....	Assistant in Obstetrics
WILLIAM P. ENGLEHART.....	Assistant in Obstetrics
JAMES P. GALLAHER.....	Assistant in Obstetrics
FRANK W. BAKER.....	Assistant in Obstetrics
BENSON C. SCHWARTZ.....	Assistant in Obstetrics
JAMES L. EAVEY.....	Assistant in Obstetrics
ROBERT K. ARTHUR.....	Assistant in Obstetrics

Second Year. During the second semester lectures are given one hour weekly. Students are oriented on the normal pelvis, generative tract and the physiology of pregnancy and labor. The conduct of normal delivery and the puerperium are

explained, and in general an attempt is made to prepare the student for the practical training he is to receive in his third year. Dr. J. M. Reese.

Third Year. Forty five lectures and recitations are given. They are designed to cover the anatomy more completely, especially that of the bony pelvis from an obstetrical point of view. Physiology of the endocrine system is reviewed as it relates to pregnancy and the growth and development of the impregnated ovum. Following this the pathology of pregnancy, labor and the puerperium are considered. Drs. Reese, Siegel, Savage, Dixon and Kaltreider.

Each student spends 4 weeks on the obstetrical service of University Hospital. During this period he receives practical instruction in the prenatal clinic, the wards and on the delivery floor. He acts as a clinical clerk and all of his work is closely supervised. In addition he is instructed in the basic sciences as related to obstetrics. Operative work on the obstetrical manikin is an organized part of the course, each student receiving 8 hours of individual instruction.

Fourth Year. The instruction is entirely clinical. Each student spends 2 weeks at Baltimore City Hospital in small groups. During this period his entire time is devoted to obstetrics. He acts as a clinical clerk and works in prenatal clinics and on the wards and delivery suite. He observes and assists in deliveries of all types and delivers some 18 to 20 patients himself. In addition he attends all rounds and conferences held.

During this 2 week period he is given introductory courses in Public Health as applied to obstetrics and in Planned Parenthood.

Second year.....	16 hours
Third year.....	141 hours
Fourth year.....	106 hours
Total.....	263 hours

ONCOLOGY [A DIVISION OF GYNECOLOGY AND SURGERY]

J. MASON HUNDLEY, JR.....	Professor of Gynecology
ERNEST I. CORNBROOKS, JR.....	Associate Professor of Gynecology
WILLIAM K. DIEHL.....	Assistant Professor of Gynecology
EVERETT S. DIGGS.....	Assistant Professor of Gynecology
BEVERLEY C. COMPTON.....	Assistant Professor of Gynecology
FRANK K. MORRIS.....	Assistant Professor of Gynecology
ARTHUR G. SIWINSKI.....	Assistant Professor of Surgery
E. EUGENE COVINGTON.....	Associate in Oncology
EDWIN H. STEWART.....	Associate in Surgery
J. DUER MOORES.....	Instructor in Surgery
LOUIS F. GOODMAN.....	Instructor in Surgery
THOMAS A. STEBBINS.....	U.S.P.H.S., Cancer Teaching Fund Medical Illustrator in Oncology and Gynecology

The purpose of the courses in Oncology is to give students training in the diagnosis and treatment of neoplastic diseases not obtained in other departments and at the same time to correlate this training with that received in surgery, medicine, roentgenology and other specialties.

Third year. Six didactic lectures are given on the diagnosis and treatment of cancer of the generative organs. Dr. Hundley and staff.

Five lectures in general oncology are given to the entire Junior Class at the end of the year. The increasing importance of the cancer problem is emphasized. The biological aspects of cancer and the relation of hormones, carcinogenic agents, and etiological factors are discussed. The gradation of neoplasms, and the biophysical effects of irradiation therapy are presented. The diagnosis, surgical and radiological treatment of neoplasms of the head and neck, oral cavity, skin, breasts, and hemopoietic system are discussed. Dr. Siwinski and staff.

Fourth Year. Ten senior students of the University section are assigned to the Oncology clinic. Five students are assigned to the Tuesday morning clinic, and the alternate group to the Friday morning clinic. The diagnosis and treatment, both surgical and radiological are discussed in the presence of a staff member of the departments of Pathology, Radiology, and Surgery.

An outpatient Gynecological Clinic is held bi-weekly which affords an opportunity for instruction of small groups of students, which are assigned in rotation, in the various phases of malignancy of the generative organs. Weekly ward rounds and operative clinics are held for seniors.

	<i>Oncology</i>	<i>Gynecology</i>	<i>Total</i>
Third year.....	5 hours	6 hours	11 hours
Fourth year.....	<u>12 hours</u>	<u>16 hours</u>	<u>28 hours</u>
Total.....	17 hours	22 hours	39 hours

OPHTHALMOLOGY

JOSEPH I. KEMLER.....	Associate in Ophthalmology
A. KREMEN.....	Associate in Ophthalmology
RUBY A. SMITH.....	Associate in Ophthalmology
D. J. MCHENRY.....	Instructor in Ophthalmology
J. E. BRUMBACK.....	Associate in Ophthalmology
RICHARD J. CROSS.....	Instructor in Ophthalmology
HENRY B. WILSON.....	Instructor in Ophthalmology
JOHN C. OZAZEWSKI.....	Assistant in Ophthalmology

Third Year. Second semester. Dr. Ozazewski reviews the anatomy and physiology of the eye and discusses the methods used in making the various examinations. Errors of refraction and their effect upon the general system are explained. Weekly section work, demonstrating the use of the ophthalmoscope, with the aid of kodachrome transparencies of the fundus oculi is carried on during the entire session at the Baltimore Eye, Ear, and Throat Hospital by Dr. Kremen.

Fourth Year. Clinics and demonstrations are given in diseases of the eye, twice weekly, for one year.

The course consists of instruction in the clinic to small groups of students four days a week for four weeks. During this period, the student examines patients, diagnoses and treats various ocular diseases, under the supervision of Drs. Smith, Brumback, Ozazewski and Wilson. Twice weekly lectures and lantern slide demonstration are given upon diseases of the eye, with particular reference to

their diagnosis, management and relation to general medicine. Special lectures are given the entire class on vascular changes in the eye, refraction, cataract, glaucoma and uveitis. Certain operations are demonstrated by motion pictures.

Weekly ward classes are held at the University and Mercy Hospitals during which eye grounds in the various medical and surgical conditions are demonstrated. Drs. Kemler, Jeppi, Pacienza, Smith, Brumback, Ozazewski and Wilson.

Third year.....	20 hours
Fourth year.....	41 hours
Total.....	<u>61 hours</u>

ORTHOPAEDICS [A DIVISION OF SURGERY]

ALLEN FISKE VOSHELL.....	Professor of Orthopaedic Surgery
HARRY L. ROGERS.....	Clinical Professor of Orthopaedic Surgery
MOSES GELLMAN.....	Associate Professor of Orthopaedic Surgery
HENRY F. ULLRICH.....	Associate Professor of Orthopaedic Surgery
MILTON J. WILDER.....	Assistant Professor in Orthopaedic Surgery
JAMES P. MILLER.....	Assistant Professor in Orthopaedic Surgery
ISADORE H. MASERITZ.....	Assistant Professor in Orthopaedic Surgery
JASON H. GASKEL.....	Associate in Orthopaedic Surgery
ISAAC GUTMAN.....	Associate in Orthopaedic Surgery
ROBERT C. ABRAMS.....	Instructor in Orthopaedic Surgery
EVERETT D. JONES.....	Assistant in Orthopaedic Surgery
JOHN J. TANSEY.....	Assistant in Orthopaedic Surgery

Didactic instruction is given in the second, third and fourth years. Clinical, bedside and outpatient instruction is given at the University, Mercy Hospitals and their Outpatient Departments, Kernan Hospital for Crippled Children, and Baltimore City Hospitals. Brief discussions and demonstrations of physical and occupational therapy are included in the course.

Second year.....	19 hours
Third year.....	36 hours
Fourth year.....	90 hours
Total.....	<u>145 hours</u>

OTOLARYNGOLOGY [A DIVISION OF SURGERY]

THOMAS R. O'ROURK.....	Professor of Otolaryngology and Head of the Division
FREDERICK T. KYPER.....	Associate Professor of Otolaryngology
BENJAMIN S. RICH.....	Associate Professor of Otolaryngology
FAYNE A. KAYSER.....	Associate Professor of Otolaryngology
SAMUEL L. FOX.....	Associate Professor of Otolaryngology
W. RAYMOND MCKENZIE.....	Assistant Professor of Otolaryngology
THEODORE A. SCHWARTZ.....	Assistant Professor of Otolaryngology
BENJAMINE H. ISAACS.....	Assistant Professor of Otolaryngology
ROBERT Z. BERRY.....	Associate in Otolaryngology
ARTHUR WARD.....	Associate in Otolaryngology
RICHARD J. CROSS.....	Associate in Otolaryngology
JOHN H. HIRSCHFIELD.....	Instructor in Otolaryngology

JOHN M. REHBERGER.....	Assistant in Otolaryngology
HARRY P. PORTER.....	Assistant in Otolaryngology
JAMES J. GERLACH.....	Assistant in Otolaryngology
FREDERICK L. STICHEL.....	Assistant in Otolaryngology
FRANK P. DWYER.....	Assistant in Otolaryngology
FREDERICK R. HAASE.....	Assistant in Otolaryngology
BASRI BULUT.....	Resident in Otolaryngology

Third Year. Instruction to the whole class is given in the common diseases of the nose and throat, attention being especially directed to infections of the accessory sinuses, the importance of focal infections in the etiology of general diseases and modern methods of diagnosis. Lectures illustrated by lantern slides are given one hour weekly for eight weeks.

Fourth Year. Out-Patient department instruction is given for three hours daily, to small sections at the University and the Mercy Hospitals. The student is afforded an opportunity to study, diagnose and treat patients under supervision. Ward classes and clinical demonstrations are given in periods of one and one-half hours weekly throughout the session in the University and Mercy Hospitals.

The Looper Clinic for bronchoscopy and esophagoscopy, recently established in the University Hospital, affords unusual opportunities for students to study diseases of the larynx, bronchi and esophagus. The clinic is open to students daily from 2 to 4 P.M.

The Mercy Hospital Bronchoscopic Clinic affords ample opportunities in bronchoscopy and esophagoscopy. In these two clinics the etiology, symptomatology, diagnosis and treatment of foreign bodies in the air and food passages, as well as bronchoscopy, are taught to students as an aid in the diagnosis and treatment of diseases of the lungs.

Third year.....	9 hours
Fourth year.....	53 hours
Total.....	62 hours

OTOLOGY

[A DIVISION OF SURGERY]

THOMAS R. O'ROURK.....	Professor of Otolaryngology
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The course in otology is planned to give a practical knowledge of the anatomy and physiology of the ear, and its proximity and relationship to the brain and other vital structures. The inflammatory diseases, their etiology, diagnosis, treatment and complications are particularly stressed, with emphasis upon their relationship to the diseases of children, head-surgery and neurology.

Third Year. The whole class is given instruction by means of talks, anatomical specimens and lantern slides. Dr. O'Rourke and associates.

Fourth Year. Small sections of the class receive instruction and make personal examinations of patients under the direction of an instructor. The student is urged to make a routine examination of the ear in his ward work in general medicine and surgery. Dr. O'Rourke and associates.

Third year.....	12 hours
Fourth year.....	40 hours
Total.....	52 hours

PATHOLOGY

HUGH R. SPENCER	Professor of Pathology and Head of the Department
ROBERT B. WRIGHT	Associate Professor of Pathology
C. GARDNER WARNER	Associate Professor of Pathology
WALTER C. MERKEL	Associate Professor of Pathology
DEXTER L. REIMANN	Associate Professor of Pathology
JOHN A. WAGNER	Associate Professor of Pathology
ALBERT E. GOLDSTEIN	Assistant Professor of Pathology
MILTON S. SACKS	Associate in Pathology
BENEDICT SKITARELIC	Associate in Pathology
CONRAD B. ACTON	Instructor in Pathology
HOWARD B. MAYS	Instructor in Pathology
WILLIAM B. VANDEGRIFT	Instructor in Pathology
WILLIAM J. BRYSON	Instructor in Pathology
KARL F. MECH	Instructor in Pathology
THEODORE KARDASH	Instructor in Pathology
LOUIS C. GAREIS	Instructor in Pathology
EDWARD L. J. KRIEG	Instructor in Pathology
JAMES R. KARNS	Instructor in Pathology
RAYMOND M. CUNNINGHAM	Instructor in Pathology
LESTER KIEFER	Instructor in Pathology
CHARLES F. CARROLL, JR.	Instructor in Pathology
HARRY COHEN	Assistant in Pathology

Courses of instruction in pathology are given during the second and third years. The courses are based on the previous study of normal structure and function and aim to outline the history of disease. The relationship between clinical symptoms and anatomical lesions is constantly stressed.

GENERAL PATHOLOGY. *Second Semester, Second Year.* This course includes the study of disturbances of the body fluids; disturbances of structure, nutrition and metabolism of cells; disturbances of fat, carbohydrate and protein metabolism; disturbances of pigment metabolism; inflammation and tumors.

Laboratory instruction is based on the study of prepared slides (loan collection) and corresponding gross material.

APPLIED PATHOLOGY, INCLUDING GROSS MORBID ANATOMY AND MORBID PHYSIOLOGY. *Third Year.* The laboratory instruction in this course is carried out in small teaching museums where prepared specimens and material from autopsies with clinical histories and sections are available for study. For this work the class is divided into small groups. Clinical correlation is stressed.

AUTOPSIES. *Third Year.* Students in small groups attend autopsies at the morgue of the University Hospital.

CLINICAL-PATHOLOGICAL CONFERENCE. (*Fourth Year.*) These exercises are held in collaboration with the various clinical departments. Selected cases are discussed and autopsy findings are presented.

Second year	184 hours
Third year	160 hours
Fourth year	30 hours
Total	374 hours

PEDIATRICS

J. EDMUND BRADLEY.....	Professor of Pediatrics and Head of the Department
C. LORING JOSLIN.....	Professor of Pediatrics
A. H. FINKELSTEIN.....	Associate Professor of Pediatrics
FREDERICK B. SMITH.....	Associate Professor of Pediatrics
SAMUEL P. BESSMAN.....	Associate Professor of Pediatrics
ALBERT JAFFE.....	Associate Clinical Professor of Pediatrics
SAMUEL S. GLICK.....	Assistant Professor of Pediatrics
JEROME FINEMAN.....	Assistant Professor of Pediatrics
GIBSON J. WELLS.....	Assistant Professor of Pediatrics
WILLIAM M. SEABOLD.....	Assistant Professor of Pediatrics
ANNIE M. BESTEBREURTJE.....	Assistant Professor of Pediatrics
RUTH W. BALDWIN.....	Assistant Professor of Pediatrics
KURT GLASER.....	Assistant Professor of Pediatrics
CLEWELL HOWELL.....	Associate in Pediatrics
G. BOWERS MANSDORFER.....	Associate in Pediatrics
SIDNEY SCHERLIS.....	Associate in Pediatrics
MELCHIJAH SPRAGINS.....	Associate in Pediatrics
ARNOLD F. LAVENSTEIN.....	Instructor in Pediatrics
MARY L. HAYLECK.....	Instructor in Pediatrics
ISRAEL P. MERANSKI.....	Instructor in Pediatrics
THOMAS A. CHRISTENSEN.....	Instructor in Pediatrics
JOSEPH M. CORDI.....	Instructor in Pediatrics
LEONARD SCHERLIS.....	Instructor in Pediatrics
LESTER H. CAPLAN.....	Instructor in Pediatrics
EDWARD G. FIELD.....	Instructor in Pediatrics
MELVIN M. BORDEN.....	Instructor in Pediatrics
HOWARD GOODMAN.....	Instructor in Pediatrics
ROBERT M. N. CROSBY.....	Instructor in Pediatrics
GARRETT E. DEANE.....	Instructor in Pediatrics
RAYMOND L. CLEMMENS.....	Instructor in Pediatrics
ARNOLD TRAMER.....	Instructor in Pediatrics
FREDERICK J. HELDRICH.....	Instructor in Pediatrics
HENRY SEIDEL.....	Instructor in Pediatrics
GRANGE S. COFFIN.....	Instructor in Pediatrics
WILLIAM EARL WEEKS.....	Assistant in Pediatrics
J. CARLTON WICH.....	Assistant in Pediatrics
O. WALTER SPURRIER.....	Assistant in Pediatrics
MARY B. MATTHEWS.....	Assistant in Pediatrics
MIRIAM S. DALY.....	Assistant in Pediatrics
WILLIAM A. NIERMANN.....	Assistant in Pediatrics
LEON DONNER.....	Assistant in Pediatrics
KATHLEEN MCGRADY.....	Assistant in Pediatrics
DAVID JOSEPHS.....	Assistant in Pediatrics
JOHN W. LOOPER.....	Assistant in Pediatrics
G. V. RAMA ROW.....	Assistant in Pediatrics
JOHN M. KRAGER.....	Assistant in Pediatrics
ALVIN A. STAMBLER.....	Assistant in Pediatrics
NICHOLAS BACHUR.....	Tobacco Industry Research Fellow

BETTY I. IVINS.....P.H.S. Research Assistant in Pediatrics
 ROBERT SHIREY.....Frank C. Bressler Research Assistant in Pediatrics

Third Year. 1. Principles of Pediatrics: Physiology of newborn, growth and development, nutrition, problems of the premature infant and diseases of newborn are presented in lectures and demonstrations (20 hours).

2. Physical examination of the infant and child plus history taking and diagnosis are taught on the pediatric wards of the University Hospital (20 hours).

Fourth Year. Students are assigned in groups of twelve for a four-week period. Responsibility is given the student for history, physical examination, laboratory examinations and progress notes on pediatric patients of the University and Mercy Hospital pediatric divisions. Examination of neonates and follow-up care of patients in the development clinical is required daily.

Daily attendance in the Pediatric Out Patient Clinics is spent in interrogation, examination, diagnosis and treatment of patients.

Students alternate nights on the Pediatric service, and at this time, sleeping accommodations are provided them in the hospital.

Students spend one day of their four weeks in the offices of selected practicing pediatricians. During this time, they observe office management, techniques and problems of patients seen in private pediatric practice.

Conferences are held daily, Monday through Friday at 12:30 p.m. On Saturday the students present a clinico-pathologic conference at which time the students act as clinician and pathologist with faculty representatives of the Departments of Pathology and Pediatrics as moderators.

PHARMACOLOGY

JOHN C. KRANTZ, JR.....Professor of Pharmacology and Head of the Department
 RAYMOND M. BURGISON.....Assistant Professor of Pharmacology
 RUTH MUSSER.....Instructor in Pharmacology
 FREDERICK K. BELL.....Assistant in Pharmacology
 AMEDEO S. MARRAZZI.....Lecturer in Pharmacology
 JOSEPH M. WHITE, III.....Lecturer in Pharmacology
 WILLIAM G. HARNE.....Demonstrator in Pharmacology
 JANE WRAY FORREST.....Emerson Fellow in Pharmacology
 HENRY F. WILSON, JR.....Fellow in Pharmacology
 CLAIRE K. HEISSE.....Research Assistant in Pharmacology
 M. JOSEPH REHAK.....Research Assistant in Pharmacology

This course is designed to include those phases of pharmacology necessary for an intelligent use of drugs in the treatment of disease. The didactic instruction includes materia medica, pharmacy, prescription-writing, toxicology, posology, pharmacodynamics, and experimental therapeutics. The laboratory exercises parallel the course of lectures.

In addition, optional conference periods and lectures are available for students desiring further instruction or advice.

Total hours: 216.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

PHYSICAL DIAGNOSIS [A DIVISION OF MEDICINE]

HENRY J. L. MARRIOTT.....	Associate Professor of Medicine, and Chief, Division of Physical Diagnosis
ROBERT A. REITER.....	Assistant Professor of Medicine
SAMUEL LEGUM.....	Assistant Professor of Medicine
EDMUND G. BEACHAM.....	Assistant Professor of Medicine
DANIEL WILFSON.....	Associate in Medicine
LEON ASHMAN.....	Associate in Medicine
STEPHEN J. VAN LILL.....	Associate in Medicine
WILLIAM G. HELFRICH.....	Associate in Medicine
ELIZABETH D. SHERRILL.....	Instructor in Medicine
FRANKLIN E. LESLIE.....	Instructor in Medicine
LAURISTON L. KEOWN.....	Instructor in Medicine
FRANCIS J. BORGES.....	Instructor in Medicine
JOSEPH C. MYERS.....	Assistant in Medicine
MARION FRIEDMAN.....	Assistant in Medicine
ANDERS ANDERSON.....	Assistant in Medicine

Second Year. A. The course in physical diagnosis begins with the first semester of the Sophomore year as a part of the instruction in Correlative Medicine. For three hours weekly throughout both semesters there is emphasis on history taking and technique of physical diagnosis as related to conjoint medicine. The course provides discussion of pathologic physiology by members of the clinical and pre-clinical departments.

B. In the second semester small tutorial groups are formed each under the direction of an instructor. In the first four weeks, experience in physical examination of normal individuals is given one afternoon weekly. During the subsequent 12 weeks, students become acquainted with abnormal signs through examination of hospital patients. For the first five of these 12 weeks, the Cardiology Division gives instruction in the physical examination of the heart. Thereafter, sections are assigned in rotation to Pediatrics and Neurology and for instruction in examination of the lungs and abdomen.

Third Year. Instruction in methods of physical diagnosis is stressed (1) during the clinical clerkship at the University Hospital and (2) at the Baltimore City Hospitals in the Outpatient Clinic and with the instruction on the chronic disease and tuberculosis wards.

PHYSIOLOGY

WILLIAM R. AMBERSON.....	Professor of Physiology and Head of the Department
DIETRICH C. SMITH.....	Professor of Physiology
FREDERICK P. FERGUSON.....	Associate Professor of Physiology
JOHN I. WHITE.....	Assistant Professor of Physiology
HOWARD B. BENSUSAN.....	Assistant Professor of Physiological Research
J. HENRY WILLS.....	Lecturer in Physiology
SAMUEL L. FOX.....	Instructor in Physiology

SYLVIA HIMMELFARB.....	Instructor in Physiology
JEANNE ANN BARRY.....	Junior Instructor in Physiology
RICHARD L. GLASSER.....	John F. B. Weaver Fellow in Physiology
BRIGITTE E. BLANKENHORN.....	Research Fellow in Physiology

First Year. Second Semester. The course in physiology is given in the second semester of the Freshman year. The course includes five lectures, two conferences and two 4-hour laboratory periods a week. The lectures cover all of the major fields in mammalian physiology.

Total hours: 225.

Graduate Courses. Consult the catalogue of the Graduate School for descriptions of the graduate courses offered by members of the staff.

PLASTIC SURGERY [A DIVISION OF SURGERY]

EDWARD A. KITLOWSKI.....	Clinical Professor of Plastic Surgery
C. PARKE SCARBOROUGH.....	Associate in Plastic Surgery
JOHN J. ANGELO.....	Assistant in Plastic Surgery
HENRIQUE B. DE MORAES.....	Fellow in Plastic Surgery

This course is designed to acquaint students with the problems of reconstructive and plastic surgery. A subdivision in the dispensary has been established and beds for patients will be available for instruction in this course at the University and Baltimore City Hospitals and Kernan's Hospital for Crippled Children.

Third Year. Five lectures are given to the whole class. Out-Patient department instruction is provided on Tuesdays. Dr. Scarborough.

Fourth Year. Ward rounds and operative demonstrations are held at the hospitals.

PREVENTIVE MEDICINE AND REHABILITATION

MAURICE C. PINCOFFS.....	Professor of Preventive Medicine and Rehabilitation and Head of the Department
HUNTINGTON WILLIAMS.....	Professor of Hygiene and Public Health
WILLIAM H. F. WARTHEN.....	Associate Professor of Hygiene and Public Health
ROSS DAVIES.....	Associate Professor of Hygiene and Public Health
FLORENCE I. MAHONEY.....	Associate Professor of Physical Medicine
MATTHEW L. TABACK.....	Assistant Professor of Hygiene and Public Health
GEORGE W. WATSON.....	Associate in Public Health
RAY J. BEASLEY.....	Associate in Preventive Medicine
HARRY B. SCOTT.....	Instructor in Preventive Medicine
GRANGE S. COFFIN.....	Instructor in Preventive Medicine

This department provides instruction in the principles of public sanitation, control of infectious disease, epidemiology, the preventive aspects of medical care programs and the operation of home, clinic and hospital programs of rehabilitation.

First Year. A. Orientation lectures and clinical conferences defining and illustrating the field of preventive medicine and rehabilitation.

B. Biostatistics. Fifteen lectures dealing with the basic methods of statistical

analysis and demonstration of their use in several areas of clinical investigation.

Second Year. A. Control of infectious disease. Lectures and field trips.

B. Correlative medicine. In this interdepartmental course preventive aspects of various diseases and programs of rehabilitation are stressed.

Third Year. A. Lectures and guided reading in the field of disease control, industrial medicine, medical care programs and medical economics.

B. Participation by students in local disease detection and control programs.

C. Participation by students in the evaluation of patients as to requirements and suitability for rehabilitation.

Fourth Year. A. Survey of patients' homes. In conjunction the departments of psychiatry, medicine and preventive medicine organize and supervise home surveys by students in which consideration is given to the family inter-relations, the economic situation, the dietary habits, the sanitation and the physical characteristics of the home as they influence the patients' illness.

PROCTOLOGY

[A DIVISION OF SURGERY]

MONTE EDWARDS	Professor of Proctology
THURSTON R. ADAMS	Assistant Professor of Proctology
SIMON BRAGER	Assistant Professor of Proctology
WILLIAM T. SUPIK	Associate in Proctology
RAYMOND M. CUNNINGHAM	Associate in Proctology
JOHN D. ROSIN	Associate in Proctology

Third Year. Seven lectures are given to the whole class. The course is for instruction in the diseases of the colon, sigmoid flexure, rectum and anus, and covers the essential features of the anatomy and physiology of the large intestine as well as the various diseases to which it is subject. Dr. Monte Edwards.

Fourth Year. Ward and dispensary instruction is given in the University and Mercy Hospitals, where different phases of the various diseases are taught by direct observation and examination. The use of the proctoscope and sigmoidoscope in the examination of the rectum and sigmoid is made familiar to each student. Mercy Hospital—Drs. Brager and Supik. University Hospital—Drs. Monte Edwards, Adams, Cunningham and Rosin.

Third year	7 hours
Fourth year	16 hours
Total	23 hours

PSYCHIATRY

JACOB E. FINESINGER	Professor of Psychiatry and Head of the Department
JOHN R. REID	Professor of Philosophy in Psychiatry
MAURICE H. GREENHILL	Professor of Psychiatry
H. WHITMAN NEWELL	Associate Professor of Psychiatry
GEORGE F. SUTHERLAND	Associate Professor of Psychiatry
MANFRED S. GUTTMACHER	Associate Clinical Professor of Psychiatry
ROBERT G. GRENELL	Associate Professor of Psychiatry
HARRY M. MURDOCK	Assistant Professor of Psychiatry
WILLIAM W. ELGIN	Assistant Professor of Psychiatry

J. G. N. CUSHING.....	Assistant Professor of Psychiatry
KATHRYN L. SCHULTZ.....	Assistant Professor of Psychiatry
KLAUS W. BERBLINGER.....	Assistant Professor of Psychiatry
LESTER M. LIBO.....	Assistant Professor of Medical Psychology
EPHRAIM T. LISANSKY.....	Associate in Psychiatry
CESAR MEZA.....	Associate in Psychiatry
ELIZABETH LaFORGE.....	Associate in Psychiatric Social Work
ENOCH CALLAWAY, JR.....	Instructor in Psychiatry
MARION W. MATHEWS.....	Instructor in Psychiatry
SAMUEL NOVEY.....	Instructor in Psychiatry
KENT E. ROBINSON.....	Instructor in Psychiatry
WILLIAM W. MAGRUDER.....	Instructor in Psychiatry
MARVIN JAFFE.....	Instructor in Psychiatry
MARCELLA WEISMAN.....	Instructor in Psychiatric Social Work
LIDA C. BROWN.....	Instructor in Psychiatry
BETSY G. WOOTTEN.....	Instructor in Psychiatry
BERNARD S. GORDON.....	Instructor in Psychiatry
MARGARET S. WILSON.....	Instructor in Psychiatric Social Work
BENJAMINE POPE.....	Instructor in Medical Psychology
FRANCES C. McGRATH.....	Instructor in Psychiatric Social Work
RALPH L. DUNLAP.....	Instructor in Medical Psychology
NATHAN SCHNAPER.....	Instructor in Psychiatry
KURT GLASER.....	Instructor in Psychiatry
WALTER S. EASTERLING.....	Instructor in Psychiatry
SHERMAN N. KIEFFER.....	Instructor in Psychiatry
ROBERT TRATTNER.....	Instructor in Psychiatry
SARAH V. HUFFER.....	Assistant in Psychiatry
BONNIE STRAIN.....	Assistant in Psychiatric Social Work
THOMAS D. HAUPT.....	Assistant in Medical Psychology
JOSEPH BIERMAN.....	Assistant in Psychiatry
ROGER S. WATERMAN.....	Assistant in Psychiatry
CHARLES S. WARD, JR.....	Assistant in Psychiatry
ISADORE TUERK.....	Consultant in Psychiatry
HARVEY A. ROBINSON.....	Research Associate in Psychiatry
GRACE L. FINESINGER.....	Research Associate in Psychiatry
MORITZ MICHAELIS.....	Research Associate in Psychiatry
RAYMOND I. BAND.....	Research Associate in Psychiatry
MELLY SIMON.....	Research Associate in Psychiatry
EMILY M. RODY.....	Fellow in Psychiatry
CHARLES BAGLEY, III.....	Fellow in Psychiatry
TANASH H. ATOYNATAN.....	Fellow in Psychiatry
FLORIS DE BALBIAN VERSTER.....	Research Assistant in Psychiatry
FLORENCE M. BURNETT.....	Research Assistant in Psychiatry
ARTHUR B. SILVERSTEIN.....	Research Assistant in Psychiatry
NORMA J. NONKEN.....	Research Assistant in Psychiatry
FRED DAVIS.....	Research Assistant in Psychiatry
DANIEL S. SAX.....	Research Assistant in Psychiatry

First Year. Sixteen one and one-half hour periods during the first semester, and sixteen one and one-half hour periods and thirty-two one hour periods during the

second semester are devoted to a consideration of human relations as applied to the practice of medicine. The topics dealt with include personality development, reactions to stress, and situational and social factors in disease. The emphasis is upon observing, understanding and evaluating the personal and social factors in the disease process, in treatment and prevention. Consideration is given to problems of values and scientific methodology as they apply to the work of the physician. Patients with common medical and surgical complaints are interviewed to illustrate methods of interviewing and developing a useful therapeutic relationship. The course is conducted by means of group discussion, supplemented by reading.

Second Year. Thirty-two one and one-half hour periods are spent in the first and second semesters in discussions and lectures. The emphasis is on methods of examining patients, and methods of developing and utilizing the doctor-patient relationship. The discussions center about psychopathology, as it operates in disease and in the treatment process. An attempt is made to relate emotional disturbances to what is known in neurophysiology, endocrinology, psychology and sociology. Patients are interviewed and examined to illustrate the general principles and the specific procedures used in the examination of patients. The group discussions are supplemented by suggested reading.

Third Year. Sixteen lecture hours are devoted to further considerations of special psychopathology and the principles of psychotherapy. Specialized forms of treatment are reviewed, but the main emphasis is toward familiarizing the student with forms of therapy feasible in routine medical practice. During 36 clinic hours the student will be supervised in history-taking, mental status and psychometric examination, and follow-up studies of patients.

Fourth Year. A clinical clerkship is offered in the wards of the University Hospital for one month. Patients are assigned for treatment under supervision. Emphasis is placed on diagnosis, methods of interviewing, methods of developing and managing a therapeutic doctor-patient relationship, and carrying out psychotherapy. This is supplemented by seminar meetings for discussion of child psychiatry, psychotherapy, clinical psychology and social service. Topics are assigned from the current literature for group discussion. Four afternoons are spent in the wards of the Spring Grove State Mental Hospital in examining patients with emphasis in the diagnosis, treatment and management of the psychoses. Eight clinics are held for the entire fourth-year class.

RADIOACTIVE ISOTOPES [A DIVISION OF MEDICINE]

JOSEPH B. WORKMAN.....	Assistant Professor of Medicine and Acting Chief, Division of Radioactive Isotopes
JOHN M. DENNIS.....	Professor of Radiology and Assistant Chief, Division of Radioactive Isotopes
DOROTHY P. DESANTIS.....	Research Assistant
M. JOANNE MITCHELL.....	Research Assistant

First Year. Orientation lecture on basic radiation physics and the University Hospital Isotope Program.

Second Year. Interdepartmental demonstrations and discussions with Departments of Physiology, Pharmacology and Medicine of specific physiological and pharmacological procedures that are adaptable to radioactive isotope techniques.

Third Year. Weekly seminars are given on radiation physics, radiation protection and the diagnostic and therapeutic uses of radioactive isotopes in Clinical and Laboratory Medicine.

Fourth Year. Weekly consultation rounds on clinical aspects of radioactive isotopes are given fourth year students during their training in Medicine and Surgery. Interested students assist in the Radioisotope Outpatient Clinic.

Summer Fellowships. The Section sponsors two summer fellowships with emphasis upon clinical application of isotopes and laboratory techniques.

RADIOLOGY

JOHN M. DENNIS.....	Professor of Radiology, and Head of the Department
CHARLES N. DAVIDSON.....	Professor of Clinical Radiology
JOHN DECARLO, JR.....	Assistant Professor of Radiology
ROBERT P. BOUDREAU.....	Assistant Professor of Radiology
EDWARD R. DANA.....	Assistant Professor of Radiology
HERBERT B. COPELAND.....	Instructor in Radiology
HERBERT L. WARRES.....	Instructor in Radiology
HENRY H. STARTZMAN, JR.....	Instructor in Radiology
NATHAN B. HYMEN.....	Assistant in Radiology
ROBERT W. SWAIN.....	Consultant in Radiologic Physics, Cancer Teaching Program

First Year. A correlated course between gross anatomy, neuro anatomy and roentgen anatomy is given. This course is given sporadically during the year in the form of lecture-demonstrations. Not only is normal anatomy shown but the radiological aspects of a few pathological processes are shown for emphasis and correlation.

Second Year. Lecture-demonstrations are given in conjunction with a course in pathology for correlation between gross pathology and roentgenological manifestations of various diseases. A correlative course is also given in physiology and roentgenology to demonstrate physiological processes as can be demonstrated roentgenologically.

Third Year. Lecture-demonstrations in diagnostic radiology are given to small groups of medical students at Baltimore City Hospitals. Basic radiation physics is briefly given.

Fourth Year. Lecture-demonstrations are again given in small groups in diagnostic radiology. These are given weekly at Mercy and bi-weekly at University Hospital. An effort is made to familiarize the students with indications for roentgenological studies in the diagnosis of various diseases.

No special courses are given in radiation therapy but radiation therapy is discussed in the oncology clinic in conjunction with the patients present.

Weekly conferences are held in conjunction with the Departments of Pediatrics, Surgery and Neurosurgery to which third and fourth year medical students are invited.

SPEECH TRAINING CLINIC [A DIVISION OF SURGERY]

EDWARD A. KITLOWSKI.....	Clinical Professor of Plastic Surgery
RAY EHRENSBERGER.....	Professor of Speech
MERLE ANSBERRY.....	Associate Professor of Speech

This department has been installed in conjunction with the Department of Speech of the University at College Park to evaluate the speech difficulties in children with congenital defects. Admission to the Clinic is by appointment only. The Clinic operates all day Thursdays.

SURGERY

ROBERT W. BUXTON.....	Professor of Surgery, and Acting Head of the Department
WALTER D. WISE.....	Professor of Surgery
D. J. PESSAGNO.....	Professor of Clinical Surgery
GEORGE H. YEAGER.....	Professor of Clinical Surgery
MONTÉ EDWARDS.....	Clinical Professor of Surgery
OTTO C. BRANTIGAN.....	Professor of Clinical Surgery
HARRY C. HULL.....	Professor of Clinical Surgery
JAMES W. NELSON.....	Professor of Clinical Surgery
R. RIDGEWAY TRIMBLE.....	Professor of Clinical Surgery
CHARLES A. REIFSCHNEIDER.....	Clinical Professor of Traumatic Surgery
EDWARD S. JOHNSON.....	Associate Professor of Surgery
CYRUS F. HORINE.....	Associate Professor of Surgery
C. W. PEAKE.....	Associate Professor of Surgery
WILLIAM F. REINHOF, JR.....	Associate Professor of Surgery
W. WALLACE WALKER.....	Associate Professor of Surgery and Surgical Anatomy
H. F. BONGARDT.....	Assistant Professor of Surgery
I. O. RIDGELY.....	Assistant Professor of Surgery
ARTHUR G. SIWINSKI.....	Assistant Professor of Surgery
SIMON BRAGER.....	Assistant Professor of Surgery and Proctology
THURSTON R. ADAMS.....	Assistant Professor of Surgery
HARRY C. BOWIE.....	Assistant Professor of Surgery
R. ADAMS COWLEY.....	Assistant Professor Thoracic Surgery, Director Cardio-Pulmonary Service, and Assistant Director Experimental Surgery.
GEORGE GOVATOS.....	Assistant Professor of Surgery
RAYMOND F. HELFRICH.....	Associate in Surgery
WILLIAM B. SETILE.....	Associate in Surgery
JOSEPH V. JERARDI.....	Associate in Surgery
HERBERT E. REIFSCHNEIDER.....	Associate in Surgery
HAROLD H. BURNS.....	Associate in Surgery
WILLIAM L. GARLICK.....	Associate in Surgery
PATRICK C. PHELAN.....	Associate in Surgery
EDWIN H. STEWART, JR.....	Associate in Surgery
E. RODERICK SHIPLEY.....	Associate in Surgery
ROBERT C. SHEPPARD.....	Associate in Surgery
F. FORD LOKER.....	Associate in Surgery
KARL F. MECH.....	Associate in Surgery
JOSEPH M. MILLER.....	Associate in Surgery
J. DUER MOORES.....	Instructor in Surgery

CALVIN HYMAN.....	Instructor in Surgery
CLYDE F. KARNs.....	Instructor in Surgery
GEORGE H. BROUILLET.....	Instructor in Surgery
JOHN F. SCHAEFER.....	Instructor in Surgery
ROBERT F. HEALY.....	Instructor in Surgery
LOUIS E. GOODMAN.....	Instructor in Surgery
HAROLD L. ZUPNIK.....	Instructor in Surgery
MICHAEL L. DEVINCENTES.....	Instructor in Surgery
RAYMOND M. CUNNINGHAM.....	Instructor in Surgery
WILLIAM D. LYNN.....	Instructor in Surgery
DAVID R. WILL.....	Instructor in Surgery
WILLIAM R. GERAGHTY.....	Assistant in Surgery
HOWARD B. McELWAIN.....	Assistant in Surgery
A. V. BUCHNESS.....	Assistant in Surgery
T. J. TOUHEY.....	Assistant in Surgery
L. T. CHANCE.....	Assistant in Surgery
W. ALLEN DECKERT.....	Assistant in Surgery
WILLIAM C. DUNNIGAN.....	Assistant in Surgery
JOHN W. CHAMBERS.....	Assistant in Surgery
ROSS Z. PIERPONT.....	Assistant in Surgery
HAROLD P. BIEHL.....	Assistant in Surgery
KIRK MOORE.....	Assistant in Surgery
WILLIAM B. REVER, JR.....	Assistant in Surgery
LEONARD G. HAMBERRY.....	Assistant in Surgery
HARRY A. LANGENFELDER.....	Assistant in Surgery
BATE C. TOMS.....	Assistant in Surgery
CHARLES E. SIMONS, JR.....	Assistant in Surgery

Instruction is given by means of lectures, laboratory work, recitations, dispensary work, bedside instruction, ward classes, and clinics. The work begins in the second year and continues throughout the third and fourth years.

The teaching is done in the anatomical laboratory, operative surgery laboratory, the Out-Patient departments, wards, laboratories and operating rooms of the University and Mercy Hospitals, and in the wards and operating rooms of the Baltimore City Hospitals.

SECOND YEAR

TOPOGRAPHIC AND SURGICAL ANATOMY. *Second semester.* The course is designed to bridge the gap between anatomy in the abstract and clinical anatomy applied to the study and practice of medicine and surgery.

The teaching is done in the anatomical laboratory. Students are required to dissect and to demonstrate all points, outlines, and regions on the cadaver. Underlying regions are dissected to bring out outlines and relations of structures.

Two lectures and two laboratory periods per week. Drs. Brantigan, Walker, Settle, Bowie, H. E. Reifschneider, Pierpont and Garrett.

Total hours: 96.

PRINCIPLES OF SURGERY. *Second semester.* The course includes discussions of irritants, infection, repair of tissue, healing of tissue, relationship of bacteriology

to surgery, modern chemotherapy in surgical diseases, ulcers, wounds, thrombophlebitis, phlebothrombosis, peripheral vascular diseases, thermal burns, injuries due to cold, surgical shock, diseases of the lymphatics, gangrene of the skin and extremities, aneurysms, hemorrhage, varicose veins, embolism, sinuses and fistulae, tetanus, anthrax and actinomycosis.

Lectures, two hours a week for one semester, are given to the whole class. Drs. Adams and Lynn.

THIRD YEAR

GENERAL AND REGIONAL SURGERY. Lectures, recitations and clinics are given on the principles of surgery and general surgery including fractures and dislocations. Three hours a week to the whole class. Dr. Hull.

The class is divided into groups. Instruction in history-taking and surgical pathology is given under the supervision of the chief of the pathology department of the Baltimore City Hospitals. Instruction is also given in surgical diagnosis and in general surgery at the bedside and in the classroom at B.C.H. by Drs. Bowie, Koontz, Brantigan, Adams and Tansey. Two hours per week are given in orthopaedic surgery by Dr. Voshell, chief of the orthopaedic service of this institution.

OPERATIVE SURGERY. Lectures and operative demonstrations are given under the supervision of Dr. Yeager assisted by Dr. Govatos. The class is divided into sections and each section is given practical and individual work under the supervision of instructors.

SURGICAL OUT-PATIENT DEPARTMENT. Under supervision, the student takes the history, makes the physical examination, attempts the diagnosis and, as far as possible, carries out the treatment of ambulatory surgical patients in the University and Mercy Hospitals. Mercy Hospital—Dr. Raymond F. Helfrich assisted by the out-patient staff. University Hospital—Drs. Settle and Sheppard assisted by the out-patient staff.

FOURTH YEAR

CLINICS. Surgical pathological Conference. A weekly conference is conducted at the University Hospital for the entire class. Daily ward classes at University and Mercy Hospitals, and half day ward work under the supervision of Dr. E. R. Shipley at University and Dr. Patrick C. Phelan, Mercy Hospital.

SURGERY OF THE CHEST. Mercy Hospital. Operations and conferences. 14 hours. Drs. Rienhoff and Garlick.

TRAUMATIC SURGERY. This course deals with operative and post-operative treatment of accident cases and with instructions as to the relationship between the state, the employee, the employer, and the physician's duty to each. One hour a week to sections of the class throughout the year. Dr. C. A. Reifschneider.

CLINICAL CLERKSHIP. This work includes the personal study of assigned hospital patients under supervision of the staffs of the University and Mercy Hospitals, and embraces history-taking, and physical examination of patients, laboratory examinations, attendance at operations and observation of post-operative treatment.

WARD CLASSES. Ward-class instruction in small groups will consist of ward rounds, surgical diagnosis, treatment and the after-care of operative cases. Mercy Hospital—Drs. Wise, Pessagno, Nelson, Trimble, Brager, Jerardi, Garlick and Loker. University Hospital—Drs. C. Reid Edwards, Yeager, Hull and C. A. Reifschneider.

THORACIC SURGERY [A DIVISION OF SURGERY]

OTTO C. BRANTIGAN.....	Professor of Thoracic Surgery
WILLIAM L. GARLICK.....	Associate Professor of Thoracic Surgery
R. ADAMS COWLEY.....	Assistant Professor of Thoracic Surgery
ELLIOTT MICHELSON.....	Instructor in Thoracic Surgery
DONALD B. HEBB.....	Assistant in Thoracic Surgery
CALVIN Y. HADDIDIAN.....	Assistant in Thoracic Surgery
JACOB ZIMMERMAN.....	Resident in Thoracic Surgery
SANTIAGO LOMBANA.....	Fellow in Thoracic Surgery

Men having completed three years of American Board of Surgery training are eligible for appointment. The first year is spent in thoracic research surgery. The second year is in clinical thoracic surgery at Baltimore City, Mercy and University Hospitals.

TROPICAL MEDICINE [A DIVISION OF MEDICINE]

Certain phases of tropical medicine are considered in the course on clinical pathology. In addition, a course of lectures and demonstrations is given to the entire fourth year class.

TUBERCULOSIS [A DIVISION OF MEDICINE]

During the third year in connection with the instruction in physical diagnosis a practical course is given at the Municipal Tuberculosis Hospital. Stress is laid upon the recognition of the physical signs of the disease, as well as upon its symptomatology and gross pathology.

UROLOGY [A DIVISION OF SURGERY]

W. HOUSTON TOULSON.....	Professor of Urology
KENNETH D. LEGGE.....	Professor of Clinical Urology
HOWARD B. MAYS.....	Assistant Professor of Urology
FRANCIS W. GILLIS.....	Assistant Professor of Urology
JOHN F. HOGAN, SR.....	Assistant Professor of Urology
JOHN S. HAINES.....	Assistant Professor of Urology
AUSTIN H. WOOD.....	Associate in Urology
LYLE J. MILLAN.....	Associate in Urology
L. K. FARGO.....	Associate in Urology
HUGH J. JEWETT.....	Associate in Urology
MARTIN A. ROBBINS.....	Associate in Urology
JOHN D. YOUNG, JR.....	Associate in Urology
JOSEPH H. MENNING.....	Instructor in Urology
HERMAN J. MEISEL.....	Instructor in Urology
WILFORD A. COUNCILL, JR.....	Instructor in Urology

JOHN F. HOGAN, JR.....	Instructor in Urology
IRVING SCHERLIS.....	Assistant in Urology
CHARLES E. SIMMONS.....	Resident in Urology

Third Year. At present 15 lectures on the fundamentals of Urology are given to the entire class. Dr. Mays.

Fourth Year. The patients on the urological wards are presented and discussed during the periods of 1-2 hours each week to the section of the senior class assigned to Surgery. The cases are presented by the student who has been assigned the patient on the wards. An opportunity is provided for the student to observe most of the diagnostic procedures in Urology. An opportunity is provided for the student to follow this patient through operative procedures as well.

A discussion of the clinical problems in Urology given by one of the attending urologists at the Mercy Hospital once weekly following one of the out-patient clinics.

Third year.....	15 hours
Fourth year.....	48 hours
Total.....	63 hours

MEDICAL LIBRARY

HOWARD ROVELSTAD, A.B., M.A., B.S.L.S..... Director of Libraries and Professor
of Library Science

IDA MARIAN ROBINSON, A.B., B.S.L.S..... Librarian and Associate Professor of
Library Science

HILDA E. MOORE, A.B., A.B.L.S..... Associate Librarian

FLORENCE R. KIRK..... Reference Librarian

HARRIETTE W. SHELTON, B.A., B.S.L.S..... Cataloguer

ELIZABETH E. McCOACH..... Assistant to the Librarian

PATRICIA C. WATKINS..... Assistant to Cataloguer

POSTGRADUATE COURSES

COMMITTEE ON POSTGRADUATE STUDIES

HOWARD M. BUBERT, *Chairman and Director*

DIETRICH C. SMITH, <i>Assistant Director and 1st Vice-chairman</i>	JOHN C. KRANTZ, JR.
L. A. M. KRAUSE, <i>2nd Vice-chairman</i>	J. MORRIS REESE
J. EDMUND BRADLEY	HARRY M. ROBINSON, JR.
OTTO C. BRANTIGAN	MILTON S. SACKS
WILLIAM K. DIEHL	WILLIAM H. TRIPLETT
FRANK H. J. FIGGE	ALLEN F. VOSHELL

JOHN A. WAGNER

ELIZABETH CARROLL, *Executive Secretary*
The Dean—*Ex Officio*

WILLIAM S. STONE—*Ex Officio*

Calendar: Postgraduate courses are offered from September 15 to June 1.

The weekly television presentation "TV-MD" resumed on September 26, 1954, and enjoyed wide acceptance. The audience each Sunday afternoon was approxi-

mately 200,000 viewers. The program appeared on WBAL-TV, Channel 11. The current series ended on Sunday, May 29, 1955 and will be resumed in the Fall of 1955.

The following intramural postgraduate courses have been continued:

ANATOMY

General Anatomy. Designed to prepare candidates for the examination of the American Board of General Surgery and Surgical Specialties. There is no strict rule governing either the content or duration of the course. Students may dissect a complete cadaver or any particular region in which they may be interested. Tuition is arranged according to registration, content and duration.

Anatomy of the Head and Neck as applied to the eye, ear, nose and throat. Duration 150 hours, beginning on October 1 and ending approximately February 28, comprising two periods of 4 hours per week. Tuition is \$150.00. Details as to the time of the individual periods will be arranged with candidates who wish to take the course.

Surgical Anatomy. Designed to prepare candidates for the examination in Anatomy of the American Board of Surgery. This is a ninety-hour course (3 hours a day, 2 days a week) given in conjunction with the regular sophomore medical course in surgical anatomy. Tuition is \$150.00.

PATHOLOGY

Neuropathology. Designed to aid in meeting the requirements of the specialty boards in neurological sciences, and covers basic studies in diseases of the central nervous system. Duration is six months, full time. Tuition is \$200.00 plus \$10.00 laboratory fee.

GYNECOLOGY

Gynecology, Oncology and Female Urology. This is a REVIEW, designed primarily for the general practitioner. Students attend lectures, ward rounds, and clinics and OBSERVE operations. Full time for ten weeks. Tuition is \$125.00.

GYNECOLOGY AND OBSTETRICS

Gynecology and Obstetrics. This is a REVIEW, designed for the general practitioner. Students attend lectures, ward rounds and clinics, and OBSERVE operations and deliveries. Full time for twelve weeks. Tuition is \$150.00.

BASIC SCIENCES

Basic Sciences as they apply to the practice of medicine. Designed to familiarize students with the advances in basic sciences during recent years. The course consists of 32 periods of 2 hours each, once a week between October and June. Tuition is \$50.00.

Full descriptions of these courses are available. Inquiries should be addressed to the Postgraduate Committee, University of Maryland School of Medicine, Baltimore 1, Maryland.

LECTURERS IN POSTGRADUATE MEDICINE

Thurston R. Adams	Frank H. J. Figge	J. Morris Reese
Marie A. Andersch	Jacob E. Finesinger	Herbert E. Reifschneider
James G. Arnold, Jr.	A. H. Finkelstein	Dexter L. Reimann
Francis Borges	Russel S. Fisher	Harry M. Robinson, Jr
Harry C. Bowie	Albert E. Goldstein	Harry M. Robinson, Sr.
J. Edmund Bradley	Maurice Greenhill	Raymond C. V. Robinson
Otto C. Brantigan	Lewis P. Gundry	Milton S. Sacks
George H. Brouillet	Nathan B. Herman	John E. Savage
Howard M. Bubert	Harry C. Hull	Leonard Scherlis
Raymond M. Burgison	J. Mason Hundley, Jr.	Sidney Scherlis
T. Nelson Carey	D. Frank Kaltreider	Emil G. Schmidt
Robert Chenowith	Theodore Kardash	William B. Settle
Ernest I. Cornbrooks, Jr.	Vernon E. Krah	Dietrich C. Smith
Edward F. Cotter	John C. Krantz, Jr.	Merrill Snyder
R. Adams Cowley	L. A. M. Krause	Hugh R. Spencer
Richard J. Cross, Jr.	Arnold F. Lavenstein	Melchijah Spragins
John DeCarlo, Jr.	C. Edward Leach	Edwin H. Stewart, Jr.
John M. Dennis	Ephraim T. Lisansky	W. Houston Toulson
Francis G. Dickey	William S. Love, Jr.	Henry F. Ullrich
William K. Diehl	Wm. V. Lovitt, Jr.	Allen Fiske Voshell
Everett S. Digs	Hugh B. McNally	John A. Wagner
D. McClelland Dixon	Howard B. Mays	Wallace Walker
Louis H. Douglass	Samuel Morrison	Milton J. Wilder
J. Sheldon Eastland	H. Whitman Newell	Walter D. Wise
W. Carl Eberling, III	Robert H. Oster	Henry L. Wollenweber
Charles Reid Edwards	Frank J. Otenasek	Theodore E. Woodward
Monte Edwards	Robert T. Parker	Joseph B. Workman
William L. Fearing	Ross Z. Pierpont	Robert B. Wright
Frederick P. Ferguson	Maurice C. Pincoffs	George H. Yeager

FIRST YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 22, 1955 TO JANUARY 28, 1956

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00 to 10:00	Histology and Embryology		1st 3 lectures Orientation 9:00-9:50 A.H.			Man and His Environment 9:00-10:50 C.H.
10:00 to 11:00	Neuro-Anatomy	Neuro-Anatomy		Neuro-Anatomy	Histology and Embryology	
11:00 to 12:00	B2 Lab.	B2 Lab.	Histology and Embryology 9:00-12:00 B2 Lab.	B2 Lab.	B2 Lab.	
12:00 to 1:00	Lunch					Psychiatry 11:00-12:30 Room 171 P.I.
1:00 to 2:00	Gross Anatomy Lecture A.H. 1:00-2:00	Gross Anatomy Conference A.H. 1:00-2:00		Gross Anatomy Lecture A.H. 1:00-2:00	Gross Anatomy Conference A.H. 1:00-2:00	
2:00 to 5:00	Gross Anat. Lab. B1 Lab.	Gross Anat. Lab. B1 Lab. Neuro-Anatomy	Unscheduled Time	Gross Anat. Lab. B1 Lab. Neuro-Anatomy	Gross Anat. Lab. B1 Lab.	

A.H.—Anatomical Hall, Upper Hall, 522 West Lombard St.
 B1—1st floor, Bressler Bldg.—Laboratory—29 S. Greene St.
 B2—2nd floor, Bressler Bldg.—Laboratory—29 S. Greene St.
 C.H.—Chemical Hall, Lower Hall, 522 West Lombard St.
 P.I.—Psychiatric Institute, 643 Redwood St.

SECOND SEMESTER, JANUARY 30 TO JUNE 9, 1956

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9:00 to 9:50	Biochem. Lect. Adm. 1	Biochem. Lect. Adm. 1	Biochem. Lect. Adm. 1	Biochem. Lect. Adm. 1	Biochem. Lect. Adm. 1	Man and His Environment C.H. 9:00-10:50
10:00 to 10:50	Physiol. Lect. B2	Physiol. Lect. B2	Physiol. Lect. B2	Physiol. Lect. B2	Physiol. Lect. B2	
11:00 to 11:50	Physiol. Conf. B2	Biochem. Conf. Adm. 1	Physiol. Conf. B2	Biochem. Conf. Adm. 1	Biostatistics C.H.	Psychiatry Room 171 P.I. 11:00-12:30
12:00 to 1:00	Lunch					
1:00 to 5:00	Laboratory Sect. A Physiol. B4 Lab. Sect. B Biochem. 3rd floor, 31 S. Greene St.	Laboratory Sect. B Physiol. B4 Lab. Sect. A Biochem. 3rd floor, 31 S. Greene St.	Unscheduled Time	Laboratory Sect. A Physiol. B4 Lab. Sect. B Biochem. 3rd floor, 31 S. Greene St.	Laboratory Sect. B Physiol. B4 Lab. Sect. A Biochem. 3rd floor, 31 S. Greene St.	

Adm. 1—1st floor, Administration Bldg.—Lecture Hall—520 W. Lombard St.
 B2—2nd floor, Bressler Bldg.—Lecture Hall—29 S. Greene St.
 B4—4th floor, Bressler Bldg.—Laboratory—29 S. Greene St.
 C. H.—Chemical Hall, Lower Hall—522 W. Lombard St.
 P. I.—Psychiatric Institute, 643 Redwood St.

Mid-Year Examinations—January 23-28, 1956

Final Examinations—Begin May 28, 1956

SECOND YEAR SCHEDULE

FIRST SEMESTER, SEPTEMBER 22, 1955 TO JANUARY 28, 1956

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:30 to 9:00		Physiol. Lect. 8:30-9:20 <i>B2</i>		Phar. Lect. 8:30-9:20 <i>B2</i>	Physiol. Lect. 8:30-9:20 <i>B2</i>	
9:00 to 9:30	Microbiology Lect. 9:00-10:00 <i>B2</i>		Microbiology Lect. 9:00-10:00 <i>B2</i>			Correlative Medicine 9:00-10:50 <i>Room 171 P.I.</i>
9:30 to 10:00		Microbiology Lect. 9:30-10:30 <i>B2</i>		Microbiology Lect. 9:30-10:30 <i>B2</i>	Physiol. Conf. 9:30-10:20	
10:00 to 10:30	Microbiology Laboratory 10:00-12:00 <i>2nd floor, 31 S. Greene St.</i>		Microbiology Laboratory 10:00-12:00 <i>31 S. Greene St.</i>			
10:30 to 11:00		Microbiology Laboratory 10:30-12:30 <i>31 S. Greene St.</i>		Microbiology Laboratory 10:30-12:30 <i>31 S. Greene St.</i>	Phar. Lect. 10:30-11:20 <i>B2</i>	
11:00 to 11:30						
11:30 to 12:00					Psychiatry 11:30-1:00 <i>Room 171 P.I.</i>	
12:00 to 12:30	Lunch		Lunch			
12:30 to 1:00	Physiol. Lect. 12:30-1:30 <i>B2</i>	Lunch	Physiol. Lect. 12:30-1:30	Lunch		
1:00 to 1:30		Clin. Pathol. Lect. 1:00-2:00 <i>B2</i>			Lunch	
1:30 to 2:00	Laboratory Sect. A Physiol. <i>B4</i> Sect. B, un- sched. time 1:30-5:00		Laboratory Sect. B Physiol. <i>B4</i> Sect. A, un- sched. time 1:30-5:00	Laboratory Sect. A Physiol. <i>B4</i> Sect. B Phar. <i>B3</i> 1:30-5:00	Laboratory Sect. B Physiol. <i>B4</i> Sect. A Phar. <i>B3</i> 1:30-5:00	
2:00 to 5:00		Clin. Path. Lab. 2:00-5:00 <i>B5</i>				

SECOND SEMESTER, JANUARY 30 TO JUNE 9, 1956

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 to 8:30					Prev. Med. 8:00-8:50 <i>C.H.</i>	
8:30 to 9:00			Surg. Anat. 8:30-9:30 <i>B2</i> 9:30-11:20 <i>B1 Lab.</i>			
9:00 to 9:30	Pathol. Lect. 9:00-10:00 <i>C.H.</i>	Pathol. Lect. 9:00-10:00 <i>C.H.</i>		Pathol. Lect. 9:00-10:00 <i>C.H.</i>	Pathol. Lect. 9:00-10:00 <i>C.H.</i>	Correlative Medicine 9:00-10:50 <i>Room 171 P.I.</i>
9:30 to 10:00						
10:00 to 10:30	Pathology Laboratory 10:00-12:00 <i>1st floor, 31 S. Greene St.</i>	Pathology Laboratory 10:00-12:00 <i>1st floor, 31 S. Greene St.</i>		Pathology Laboratory 10:00-12:00 <i>1st floor, 31 S. Greene St.</i>	Pathology Laboratory 10:00-12:00 <i>1st floor, 31 S. Greene St.</i>	
10:30 to 11:00						
11:00 to 11:30						Pathology Lecture 11:00-12:00 <i>C.H.</i>
11:30 to 12:00			Phar. Lect. 11:30-12:30 <i>C.H.</i>			
12:00 to 12:30	Lunch 12:00-1:00			Lunch 12:00-1:00		
12:30 to 1:00			Lunch 12:30-1:30			
1:00 to 1:30	Neurology 1:00-1:50 <i>C.H.</i>	Clin. Path. 1:00-2:00 <i>B2</i>		Phar. Lect. 1:00-1:50 <i>B2</i>	Phar. Lect. 1:00-1:50 <i>B2</i>	
1:30 to 2:00			Psychiatry 1:30-3:00 <i>Room 171 P.I.</i>			
2:00 to 5:00	Surg. Anat. 2:00-3:00 <i>B2</i> 3:00-5:00 <i>B1 Lab.</i>	Laboratory 2:00-5:00 <i>B5</i>		Phar. Lab. 2:00-5:00 <i>B3</i> Sect. A Physical Diag. 2:00-5:00 <i>U.H.D.</i> Sect. B	Sect. B	

B1, 1st floor Laboratory, *B2*, 2nd floor Lecture Hall, *B3*, 3rd floor Laboratory, *B4*, 4th floor Laboratory, *B5*, 5th floor Laboratory—Bressler Bldg., 29 S. Greene St. *C.H.*—Chemical Hall, Lower Hall—322 W. Lombard St. *P.I.*—Psychiatric Institute, 643 Redwood St. *U.H.D.*—University Hospital Out Patient Department, 601 Lombard St. Mid-year Examinations—January 23-28, 1956; Final Examinations—Begin May 28, 1956.

THIRD YEAR SCHEDULE

SEPTEMBER 22, 1955 TO MAY 26, 1956

LECTURE SCHEDULE**

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00 to 8:50	Surgery <i>C. H.</i>	Surgery <i>C. H.</i>	Obstetrics <i>C. H.</i>	Surgery <i>C. H.</i>	Pathology <i>C. H.</i>	Surgical Specialties <i>C. H.</i>
9:00 to 9:50	Medicine Neurology Preventive Medicine <i>C. H.</i>	Obstetrics 1st Semester Psychiatry 2nd Semester <i>C. H.</i>	Surgical Spec. Urology Plastic Surgery Ophthalmology <i>C. H.</i>	Gynecology Ophthalmology <i>C. H.</i>	Medicine Legal Medicine Preventive Medicine <i>C. H.</i>	<i>C. P. C.</i> <i>AMP.</i>

CLASS DIVISIONS*

Division 1	Division 2	Division 3	Division 4†
Medicine — Legal Medicine Industrial Medicine Neurology Infectious Diseases Preventive Medicine	Surgery — Operative Surgery Neurosurgery Otolaryngology Otology Ophthalmoscopy Pathology	The Specialties — Obstetrics Pathology Psychiatry Pediatrics	Clinical Clerkships Neurology Pathology Radiology Orthopaedics

STUDENT GROUP ASSIGNMENTS

1st Quarter	3rd Quarter
September 22, 1955 to November 16, 1955 (8 weeks) Groups 1 and 2 Division 1 Groups 3 and 4 Division 2 Groups 5 and 6 Division 3 Groups 7 and 8 Division 4	January 30, 1956 to March 24, 1956 (8 weeks) Groups 1 and 2 Division 3 Groups 3 and 4 Division 4 Groups 5 and 6 Division 1 Groups 7 and 8 Division 2
2nd Quarter	4th Quarter
November 17, 1955 to January 28, 1956 (8 weeks) Groups 1 and 2 Division 2 Groups 3 and 4 Division 3 Groups 5 and 6 Division 4 Groups 7 and 8 Division 1	March 26, 1956 to May 26, 1956 (8 weeks) Groups 1 and 2 Division 4 Groups 3 and 4 Division 1 Groups 5 and 6 Division 2 Groups 7 and 8 Division 3

** Refer to mimeographed schedules for complete details.

NOTE: April 19 and 20 Annual Meeting Medical and Chirurgical Faculty.

* The Curriculum is arranged into 4 divisions, and the class into 8 groups. The entire class assembles daily (except Sunday) for lectures at 8:00 and at 9:00 a.m. in Chemical Hall after which students assigned to Division 4 transfer to B.C.H. Divisions 1, 2, and 3 remain at University Hospital.

† Students of Division 4 spend 8 weeks at Baltimore City Hospitals. On Mondays and Tuesdays students assigned to Division 4 at Baltimore City Hospitals return to the Medical School for Medical Clinic and Pathology.

4-week Periods:

September 22-October 19
October 20 -November 16
November 17-December 21
January 3 -January 28

January 30 -February 25
February 27-March 24
March 26 -April 28
April 30 -May 26

FOURTH YEAR SCHEDULE

SEPTEMBER 22, 1955 TO MAY 26, 1956

CLASS DIVISIONS*

Division 1†	Division 2	Division 3†	Division 4
Medicine and Medical Specialties (8 weeks)	Pediatrics (4 weeks)	Surgery and Surgical Specialties (8 weeks)	Obstetrics (2 weeks)
—	—	—	—
Neurology	Psychiatry (4 weeks)	Urology	Gynecology
Hypertension		Neuro Surgery	Oncology (2 weeks)
Cardiology		Otology,	—
Gastro-Enterology		Otolaryngology	Dermatology & Syphilology
Metabolism		Orthopaedics	Oncology
Allergy		—	Ophthalmology
Infectious Diseases		Radiology	Anesthesiology (4 weeks)
—			
Radiology			

STUDENT GROUP ASSIGNMENTS

1st Quarter	3rd Quarter
Sept. 22, 1955 to Nov. 16, 1955 (8 weeks)	Jan. 30, 1956 to March 24, 1956 (8 weeks)
Groups 1, 2, 3, 4 to Division 1†	Groups 1, 2, 3, 4 to Division 3†
Groups 5, 6, 7, 8 to Division 2	Groups 5, 6, 7, 8 to Division 4
Groups 9, 10, 11, 12 to Division 3†	Groups 9, 10, 11, 12 to Division 1†
Groups 13, 14, 15, 16 to Division 4	Groups 13, 14, 15, 16 to Division 2
2nd Quarter	4th Quarter
Nov. 17, 1955 to Jan. 28, 1956 (8 weeks)	March 26, 1956 to May 26, 1956 (8 weeks)
Groups 1, 2, 3, 4 to Division 2	Groups 1, 2, 3, 4 to Division 4
Groups 5, 6, 7, 8 to Division 3†	Groups 5, 6, 7, 8 to Division 1†
Groups 9, 10, 11, 12 to Division 4	Groups 9, 10, 11, 12 to Division 2
Groups 13, 14, 15, 16 to Division 1†	Groups 13, 14, 15, 16 to Division 3†

*The curriculum is arranged into 4 divisions, and the senior class into 16 groups.

† The curriculum of Divisions 1 and 3 is given at the University and Mercy Hospitals simultaneously. There are 4 groups of students assigned to each division. Two groups or one half the students of each division are assigned work for 4 weeks at each hospital. Students belonging to groups 1, 2, 9 and 10 report to the University Hospital for the 1st 4 weeks. Groups 3, 4, 11 and 12 report to Mercy. At the end of 4 weeks the students at the University Hospital report to Mercy and the groups at Mercy report to the University Hospital for a similar period, thus completing for each group involved one division of work.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND COLLEGE OF PHYSICIANS AND SURGEONS

GRADUATES, JUNE 4, 1955

ALBRECHT, JOHN GEORGE.....New York	GILMORE, GEORGE TRAVERS, B.A.
BAKER , GEORGE KOHLER, B.A..Maryland	Maryland
BALCERZAK, STANLEY PAUL, JR.	GOLDBERG, JULIAN ROBERT, B.A.
Pennsylvania	Maryland
BALL, JAMES JOHN.....Maryland	GOLDINER, MARVIN ALFRED, B.S.
BARNETT, ROBERT MAITLAND, JR.	Maryland
South Carolina	GOSHORN, GARY SWAN, B.A....Maryland
BENITEZ-VAN RHYN, EUGENIO ENRIQUE,	HARRIS, DANIEL BERNARD, B.S.
B.A.....Puerto Rico	Maryland
BEYER, OTTO CHRISTIAN, B.S..Maryland	HECKER, ALVIN WILFRED, A.B.
BLANKMAN, NORMAN, B.S....Maryland	Maryland
BRADLEY, ALBERT BENNETT, B.A.	HERBST, HARRY HERMAN, B.S.
Maryland	Maryland
BRUNSCHWYLER, PHILIP CRAIG, A.B.	HIGMAN, HENRY BOOTH, B.A..Maryland
West Virginia	HIMMLER, WALTER NORMAN, B.S.
BULLARD, FOSTER LUCIUS, JR., A.B.	Maryland
Florida	HOLLISTER, WILLIAM, JR., B.S.
CAMERON, DONALD CHISHOLM, B.A.	North Carolina
Delaware	HUDSON, PAUL CARROLL, A.B..Maryland
CAPEL, NEAL CONRAD, B.S....Utah	HUGHES, JAMES LEWIS, B.S....Maryland
CAVALLARO, JOSEPH WILLIAM, B.S.	IWANTSCH, ALFRED EDMUND...Maryland
Maryland	JAMES, WALTER EDWARD, B.S..Maryland
CHARLES, RODERICK EDWARD, B.S. <i>Cal</i>	KAPPELMAN, MURRAY MARTIN, B.S.
Maryland	Maryland
CLOSE, JAMES MCCLAY, B.A...Maryland	KEEFE, WILLIAM PETER, B.S.
COHEN, JONAS KOLKER, A.B...Maryland	Connecticut
COLE, ROGER WILLARD, B.S...Maryland	KEEGAN, JAMES THOMAS, B.A.
CORNELL, ROGER DETLER, B.S..Maryland	Connecticut
COWAN, THOMAS WARNER, B.S.	KIMMEL, LOUIS EDMUND, JR., B.S.
Pennsylvania	Maryland
COX, EVERARD FRANCIS, B.S...Utah	KING, DANIEL DENOON, JR., B.S.
DALY, MARY VIOLA, B.S., M.S.	Maryland
Maryland	KIRBY, WILLIAM HENRY, JR., B.E., M.S.
DANN, THEODORE ALVIN, B.S..Maryland	Maryland
DARRELL, JOHN JOSEPH.....Maryland	KLUGMAN, YALE LEE, B.S....Maryland
DAVIS, THOMAS EDWARD, B.A..Maryland	KOONS, CHARLES RONALD, B.S.
DEMBO, DONALD HOWARD, B.A.	New Jersey
Maryland	KRAMER, MORTON DAVIS, B.S..Maryland
DIEDERICHS, HENRY AUGUST, B.A..Ohio	KRONE, WILLIAM FRANK, JR., B.A.
DVORINE, WILLIAM, B.A....Maryland	New Jersey
ENGERS, JOHN ALBERT, JR., B.S.	LANCASTER, ROBERT GREGORY
Maryland	Washington
ESHELMAN, JOSEPH CHALICE...Maryland	LAVY, NORMAN WILBUR, B.A..Maryland
FELDMAN, MARTIN JEROME, B.S.	LEIGHTON, RICHARD FREDERICK, B.A.
Maryland	Maryland
FREDERICK, JAMES NELSON, A.B.	LEIPOLD, ERNEST ADAM, JR....Maryland
West Virginia	LEWANDOWSKI, ANTHONY ADAM, B.A.
FRISKEY, GEORGE HAMILTON, B.A.	Maryland
Maryland	LONGO, FRANK WALTER, B.S.
GALLOWAY, CHARLES BARTON, B.A.	Connecticut
Maryland	LYTTON, SIDNEY MELBOURNE, B.A.
GAULD, JOHN ROSS, A.A.....Maryland	Maryland
GELHAUS, VERNON MAYNARD..Maryland	McGOWAN, JOHN PETER, B.S..New York
GIFFORD, GEORGE EDMUND, JR., B.S.	McINTYRE, DAVID BACK, B.S..Maryland
Maryland	MENDELSON, JACK HAROLD....Maryland

MIKOLOSKI, VINCENT STANLEY, JR., B.A.	SCHANBERGER, JOHN EDWARD, B.A.
Massachusetts	Maryland
MOONEY, ALBERT LEE, B.S....	SHIREY, ROBERT GARLAND, B.S.
Maryland	West Virginia
MORNINGSTAR, GEORGE LEO, A.B.	SMALL, RICHARD ELWOOD, A.B.
West Virginia	Pennsylvania
MORSE, LEONARD JACK, B.A.	SNYDER, CLOVIS MARENE, B.A.
Massachusetts	Maryland
MUELLER, PAUL GODFREY....	SPOCK, ALEXANDER, B.S....
Maryland	Pennsylvania
MURPHY, JAMES THOMAS, B.S.	STAGGERS, PHILLIP GARY, B.S.
North Dakota	West Virginia
NATARO, FRANK ROBERT D'ANNEO, B.A.	STERLING, WILLIAM NORTON, B.S.
New Jersey	District of Columbia
NEELEY, JAMES PATTON, JR., B.S....	STEWART, DONALD WALLACE, B.S.
Utah	Maryland
POLIS, GEORGE NICHOLAS, B.S.	STITCHER, JOSEPH EDWARD, B.S.
District of Columbia	Maryland
POPPIE, ROBERT WILLIAM, B.A.	SUSSMAN, KARL EDGAR, B.S....
North Dakota	Maryland
PRATT, CHARLES BENTON, JR., A.B.	THORPE, PETER VAN BOEKEL, A.B.
North Carolina	Maryland
RASKIN, JOAN, A.B.....	WALTON, FRED RICHARD, B.A....
Maryland	Indiana
SAMORODIN, VIOLET SELMA, B.S.	WARD, ANN MARIE, B.A....
Maryland	New Jersey
SAX, ALBERT MORTON, B.S....	WELLING, CHARLES CLARK, B.S....
Maryland	Utah
	YOUSEM, HERBERT LEONARD, B.A.
	Maryland

HONORS

UNIVERSITY PRIZE GOLD MEDAL

MURRAY MARTIN KAPPELMAN

CERTIFICATE OF HONOR

VIOLET SELMA SAMORODIN

NEAL CONRAD CAPEL
JAMES THOMAS KEEGAN

EUGENIO ENRIQUE BENITEZ-VAN RHYN
PHILLIP GARY STAGGERS

THE DR. A. BRADLEY GAITHER MEMORIAL PRIZE

GEORGE EDMUND GIFFORD, JR.

THE DR. WILLIAM D. WOLFE MEMORIAL PRIZE AND CERTIFICATE
OF PROFICIENCY IN DERMATOLOGY

EVERARD FRANCIS COX

THE DR. LEONARD M. HUMMEL MEMORIAL MEDAL AND CERTIFICATE
OF PROFICIENCY IN INTERNAL MEDICINE

MURRAY MARTIN KAPPELMAN

INTERNSHIPS—GRADUATES OF JUNE 4, 1955

JULY 1, 1955—JUNE 30, 1956

JOHN GEORGE ALBRECHT.....Medical College of Virginia Hospital, Richmond, Virginia
GEORGE KOHLER BAER.....Kings County Hospital Center, Brooklyn, New York
STANLEY PAUL BALCERZAK, JR.....Presbyterian Hospital, Pittsburgh, Pennsylvania
JAMES JOHN BALL.....Georgia Baptist Hospital, Atlanta, Georgia
ROBERT MAITLAND BARNETT, JR.....Roper Hospital, Charleston, South Carolina
EUGENIO ENRIQUE BENITEZ VAN RHYN.....University Hospital, Baltimore, Maryland

OTTO CHRISTIAN BEYER.....	Bon Secours Hospital, Baltimore, Maryland
NORMAN BLANKMAN.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
ALBERT BENNETT BRADLEY.....	University Hospital, Baltimore, Maryland
PHILIP CRAIG BRUNSCHWYLER.....	Kansas City Medical Center, Kansas City, Kansas
FOSTER LUCIUS BULLARD.....	Georgia Baptist Hospital, Atlanta, Georgia
DONALD CHISHOLM CAMERON.....	The Memorial Hospital, Wilmington, Delaware
NEAL CONRAD CAPEL.....	Dr. W. H. Groves Latter-Day Saints Hospital, Salt Lake City, Utah
JOSEPH WILLIAM CAVALLARO.....	Mercy Hospital, Baltimore, Maryland
RODERICK EDWARD CHARLES....	Milwaukee County General Hospital, Milwaukee, Wis- consin
JAMES MCCLAY CLOSE.....	Letterman Army Hospital, Presidio, San Francisco, California
JONAS COHEN.....	Boston City Hospital, Boston, Massachusetts
ROGER WILLARD COLE.....	U. S. Naval Hospital, Chelsea, Massachusetts
ROGER DETLEF CORNELL.....	Garfield Memorial Hospital, Washington, D. C.
THOMAS WARNER COWAN.....	Ohio State University Hospital, Columbus, Ohio
EVERARD FRANCIS COX.....	U. S. Naval Hospital, Jacksonville, Florida
MARY VIOLA DALY.....	Lutheran Hospital of Maryland, Inc., Baltimore, Maryland
THEODORE ALVIN DANN.....	Los Angeles County General Hospital, Los Angeles, California
JOHN JOSEPH DARRELL.....	Mercy Hospital, Baltimore, Maryland
THOMAS EDWARD DAVIS.....	University Hospital, Baltimore, Maryland
DONALD HOWARD DEMBO.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
HENRY AUGUST DIEDERICHS.....	Ohio State University Hospital, Columbus, Ohio
WILLIAM DVORINE.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
JOHN ALBERT ENGERS, JR.....	Bon Secours Hospital, Baltimore, Maryland
JOSEPH CHALICE ESELMAN.....	Uniontown Hospital Association, Uniontown, Pennsylvania
MARTIN JEROME FELDMAN.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
JAMES NELSON FREDERICK.....	St. Agnes' Hospital, Baltimore, Maryland
GEORGE HAMILTON FRISKEY.....	St. Agnes' Hospital, Baltimore, Maryland
CHARLES BARTON GALLOWAY.....	Harper Hospital, Detroit, Michigan
JOHN ROSS GAULD.....	University Hospital, Baltimore, Maryland
VERNON MAYNARD GELHAUS.....	Bon Secours Hospital, Baltimore, Maryland
GEORGE EDMUND GIFFORD, JR.....	University Hospital, Baltimore, Maryland
GEORGE TRAVERS GILMORE.....	St. Agnes' Hospital, Baltimore, Maryland
JULIAN ROBERT GOLDBERG.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
MARVIN ALFRED GOLDINER.....	Medical College of Virginia Hospital, Richmond, Virginia
GARY SWAN GOSHORN.....	University Hospital, Baltimore, Maryland
DANIEL BERNARD HARRIS.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
ALVIN WILFRED HECKER.....	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
HARRY HERMAN HERBST.....	University Hospital, Baltimore, Maryland
HENRY BOOTH HIGMAN.....	The Delaware Hospital, Wilmington, Delaware
WALTER NORMAN HIMMLER.....	University Hospital, Baltimore, Maryland
WILLIAM HOLLISTER, JR.....	Medical College of Virginia Hospital, Richmond, Virginia
PAUL CARROLL HUDSON.....	University Hospital, Baltimore, Maryland
JAMES LEWIS HUGHES.....	St. Agnes' Hospital, Baltimore, Maryland
ALFRED EDMUND IWANTSCH.....	The Union Memorial Hospital, Baltimore, Maryland
WALTER EDWARD JAMES.....	Bon Secours Hospital, Baltimore, Maryland
MURRAY MARTIN KAPPELMAN.....	University Hospital, Baltimore, Maryland
WILLIAM PETER KEEFE.....	St. Francis Hospital, Hartford, Connecticut
JAMES THOMAS KEEGAN.....	Rhode Island Hospital, Providence, Rhode Island
LOUIS EDMUND KIMMEL, JR.....	Maryland General Hospital, Baltimore, Maryland
DANIEL DENOON KING.....	University Hospital, Ann Arbor, Michigan
WILLIAM HENRY KIRBY, JR.....	Church Home and Hospital, Baltimore, Maryland
YALE LEE KLUGMAN.....	Wayne County General Hospital, Eloise, Michigan
CHARLES RONALD KOONS.....	Ohio State University Hospital, Columbus, Ohio
MORTON DAVID KRAMER.....	University Hospital, Baltimore, Maryland
WILLIAM FRANK KRONE, JR.....	University Hospital, Baltimore, Maryland
ROBERT GREGORY LANCASTER.....	Mercy Hospital, Baltimore, Maryland
NORMAN WILBUR LAVY.....	University Hospital, Baltimore, Maryland
RICHARD FREDERICK LEIGHTON.....	University Hospital, Baltimore, Maryland
ERNEST ADAM LEIPOLD, JR.....	The Union Memorial Hospital, Baltimore, Maryland
ANTHONY ADAM LEWANDOWSKI.....	Mercy Hospital, Baltimore, Maryland
FRANK WALTER LONGO.....	New Rochelle Hospital, New Rochelle, New York

SIDNEY MELBOURNE LYTTON.....	Montefiore Hospital, New York, N. Y.
JOHN PETER MCGOWAN..	U. S. Public Health Service Hospital, New Orleans, Louisiana
DAVID BECK MCINTYRE.....	St. Agnes' Hospital, Baltimore, Maryland
JACK HAROLD MENDELSON.....	Boston City Hospital, Boston, Massachusetts
VINCENT STANLEY MIKOLOSKI, JR.....	Worcester City Hospital, Worcester, Massachusetts
ALBERT LEE MOONEY.....	The Union Memorial Hospital, Baltimore, Maryland
GEORGE LEO MORNINGSTAR.....	St. Agnes' Hospital, Baltimore, Maryland
LEONARD JACK MORSE.....	University Hospital, Baltimore, Maryland
PAUL GODFREY MUELLER.....	Mercy Hospital, Baltimore, Maryland
JAMES THOMAS MURPHY..	Milwaukee County General Hospital, Milwaukee, Wisconsin
FRANK ROBERT D'ANNEO NATARO..	Meadowbrook Hospital, Hempstead, New York
JAMES PATTON NEELEY....	Salt Lake County General Hospital, Salt Lake City, Utah
GEORGE NICHOLAS POLIS..	George Washington University Hospital, Washington, D. C.
ROBERT WILLIAM POPPIE.....	Saint Luke's Hospital, Duluth, Minnesota
CHARLES BENTON PRATT....	Medical College of Virginia Hospital, Richmond, Virginia
JOAN RASKIN.....	University Hospital, Baltimore, Maryland
VIOLET SELMA SAMORODIN.....	Johns Hopkins Hospital, Baltimore, Maryland
ALBERT MORTON SAX.....	Strong Memorial Municipal Hospital, Rochester, New York
JOHN EDWARD SCHANBERGER.....	Mercy Hospital, Baltimore, Maryland
ROBERT GARLAND SHIREY....	Charleston General Hospital, Charleston, West Virginia
RICHARD ELLWOOD SMALL.....	York Hospital, York, Pennsylvania
CLOVIS MARENE SNYDER.....	University Hospital, Baltimore, Maryland
ALEXANDER SPOCK....	George F. Geisinger Memorial Hospital, Danville, Pennsylvania
PHILLIP GARY STAGGERS.....	U. S. Naval Hospital, San Diego, California
WILLIAM NORTON STERLING..	George Washington University Hospital, Washington, D. C.
DONALD WALLACE STEWART..	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland
JOSEPH EDWARD STITCHER.....	U. S. Naval Hospital, Philadelphia, Pennsylvania
KARL EDGAR SUSSMAN.....	Barnes Hospital, St. Louis, Missouri
PETER VAN BOEKEL THORPE.....	St. Agnes' Hospital, Baltimore, Maryland
FRED RICHARD WALTON.....	U. S. Naval Hospital, Portsmouth, Virginia
ANN MARIE WARD.....	Meadowbrook Hospital, Hempstead, New York
CHARLES CLARK WELLING..	Highland Alameda County Hospital, Oakland, California
HERBERT LEONARD YOUSEM..	Sinai Hospital of Baltimore, Inc., Baltimore, Maryland

MATRICULANTS

SENIOR CLASS, SEPTEMBER 16, 1954 TO JUNE 4, 1955

ALBRECHT, JOHN GEORGE, <i>Adelphi College</i>	New York
BAER, GEORGE KOHLER, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
BALCERZAK, STANLEY PAUL, JR., <i>University of Pittsburgh</i>	Pennsylvania
BALL, JAMES JOHN, <i>University of Illinois</i>	Maryland
BARNETT, ROBERT MATTLAND, JR., <i>College of Charleston</i>	South Carolina
BENITEZ-VAN RHYN, EUGENIO ENRIQUE, B.S., <i>University of Puerto Rico, 1951</i>	Puerto Rico
BEYER, OTTO CHRISTIAN, B.S., <i>Loyola College, 1951</i>	Maryland
BLANKMAN, NORMAN, B.S., <i>University of Maryland, 1953</i>	Maryland
BRADLEY, ALBERT BENNETT, B.A., <i>Johns Hopkins University, 1951</i>	Maryland
BRUNSCHWYLER, PHILIP CRAIG, A.B., <i>West Virginia University, 1951</i>	West Virginia
BULLARD, FOSTER LUCIUS, JR., A.B., <i>Emory University, 1951</i>	Florida
CAMERON, DONALD CHISHOLM, B.A., <i>University of Delaware, 1951</i>	Delaware
CAPEL, NEAL CONRAD, B.S., <i>University of Utah, 1951</i>	Utah
CAVALLARO, JOSEPH WILLIAM, B.S., <i>University of Maryland, 1950</i>	Maryland
CHARLES, RODERICK EDWARD, B.S., <i>Howard University, 1951</i>	Maryland
CLOSE, JAMES MCCLAY, B.A., <i>Virginia Military Institute, 1951</i>	Maryland
COHEN, JONAS KOLKER, A.B., <i>University of Maryland, 1950</i>	Maryland
COLE, ROGER WILLARD, B.S., <i>University of Maryland, 1953</i>	Maryland
CORNELL, ROGER DETLEF, B.S., <i>Davidson College, 1951</i>	Maryland
COWAN, THOMAS WARNER, B.S., <i>University of Maryland, 1953</i>	Pennsylvania
COX, EVERARD FRANCIS, B.S., <i>University of Utah, 1951</i>	Utah
DALY, MARY VIOLA, B.S., <i>American University 1950; M.S., Iowa State College, 1951</i>	Maryland
DANN, THEODORE ALVIN, B.S., <i>University of Maryland, 1953</i>	Maryland

DARRELL, JOHN JOSEPH, <i>Loyola College</i>	Maryland
DAVIS, THOMAS EDWARD, A.B., <i>Washington & Lee University, 1951</i>	Maryland
DEMBO, DONALD HOWARD, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
DIEDERICH, HENRY AUGUST, A.B., <i>Wittenberg College, 1951</i>	Ohio
DVORINE, WILLIAM, A.B., <i>Western Maryland College, 1950</i>	Maryland
ENGERS, JOHN ALBERT, JR., B.S., <i>Georgetown University, 1950</i>	Maryland
ESHELMAN, JOSEPH CHALICE, <i>University of Maryland</i>	Maryland
FELDMAN, MARTIN JEROME, B.S., <i>Loyola College, 1951</i>	Maryland
FREDERICK, JAMES NELSON, A.B., <i>West Virginia University, 1951</i>	West Virginia
FRISKEY, GEORGE HAMILTON, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
GALLOWAY, CHARLES BARTON, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
GAULD, JOHN ROSS, A.B., <i>University of Maryland, 1951</i>	Maryland
GELHAUS, VERNON MAYNARD, <i>Loyola College</i>	Maryland
GIFFORD, GEORGE EDMUND, JR., B.S., <i>University of Maryland, 1951</i>	Maryland
GILMORE, GEORGE TRAVERS, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
GOLDBERG, JULIAN ROBERT, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
GOLDNER, MARVIN ALFRED, B.S., <i>University of Maryland, 1953</i>	Maryland
GOSHORN, GARY SWAN, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
HARRIS, DANIEL BERNARD, B.S., <i>University of Maryland, 1951</i>	Maryland
HECKER, ALVIN WILFRED, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
HERBST, HARRY HERMAN, B.S., <i>University of Maryland, 1953</i>	Maryland
HIGMAN, HENRY BOOTH, A.B., <i>St. Johns College, 1950</i>	Maryland
HIMMLER, WALTER NORMAN, B.S., <i>University of Maryland, 1953</i>	Maryland
HOLLISTER, WILLIAM, JR., B.S., <i>Davidson College, 1951</i>	North Carolina
HUDSON, PAUL CARROLL, A.B., <i>Princeton University, 1948</i>	Maryland
HUGHES, JAMES LEWIS, B.S., <i>Georgetown University, 1951</i>	Maryland
IWANTSCH, ALFRED EDMUND, <i>Johns Hopkins University</i>	Maryland
JAMES, WALTER EDWARD, B.S., <i>University of Maryland, 1953</i>	Maryland
KAPPELMAN, MURRAY MARTIN, B.S., <i>University of Maryland, 1953</i>	Maryland
KEEFE, WILLIAM PETER, B.S., <i>College of the Holy Cross, 1951</i>	Connecticut
KEEGAN, JAMES THOMAS, A.B., <i>Dartmouth College, 1951</i>	Connecticut
KIMMEL, LOUIS EDMUND, JR., B.S., <i>University of Maryland, 1953</i>	Maryland
KING, DANIEL DENOON, JR., B.S., <i>College of William and Mary, 1951</i>	Maryland
KIRBY, WILLIAM HENRY, JR., B.E., <i>Johns Hopkins University, 1943, M.S. Johns Hopkins University, 1951</i>	Maryland
KLUGMAN, YALE LEE, B.S., <i>University of Maryland, 1953</i>	Maryland
KOONS, CHARLES RONALD, B.S., <i>Purdue University, 1951</i>	New Jersey
KRAMER, MORTON DAVID, B.S., <i>University of Maryland, 1950</i>	Maryland
KRONE, WILLIAM FRANK, JR., A.B., <i>Washington and Jefferson College, 1951</i>	Maryland
LANCASTER, ROBERT GREGORY, <i>Gonzaga University</i>	Washington
LAVY, NORMAN WILBUR, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
LEIGHTON, RICHARD FREDERICK, B.A., <i>Western Maryland College, 1951</i>	Maryland
LEIPOLD, ERNEST ADAM, JR., <i>Johns Hopkins University</i>	Maryland
LEWANDOWSKI, ANTHONY ADAM, A.B., <i>Loyola College, 1951</i>	Maryland
LONGO, FRANK WALTER, B.S., <i>University of Maryland, 1951</i>	Connecticut
LYTTON, SIDNEY MELBOURNE, JR., A.B., <i>University of Maryland, 1949</i>	Maryland
MCGOWAN, JOHN PETER, B.S., <i>St. John's University, 1951</i>	New York
MCINTYRE, DAVID BECK, B.S., <i>University of Maryland, 1951</i>	Maryland
MENDELSON, JACK HAROLD, <i>Johns Hopkins University</i>	Maryland
MIKOLOSKI, VINCENT STANLEY, JR., A.B., <i>Clark University, 1951</i>	Massachusetts
MOONEY, ALBERT LEE, B.S., <i>Washington College, 1943</i>	Maryland
MORNINGSTAR, GEORGE LEO, A.B., <i>West Virginia University, 1951</i>	West Virginia
MORSE, LEONARD JACK, A.B., <i>American International College, 1951</i>	Massachusetts
MUELLER, PAUL GODFREY, <i>Loyola College</i>	Maryland
MURPHY, JAMES THOMAS, B.S., <i>Notre Dame University, 1953; University of North Dakota Medical School 1951-1953</i>	North Dakota
NATARO, FRANK ROBERT D'ANNEO, A.B., <i>Yale University, 1947, M.B.A., Columbia University, 1951</i>	New Jersey
NEELEY, JAMES PATTON, JR., B.S., <i>University of Utah, 1951</i>	Utah
POLIS, GEORGE NICHOLAS, B.S., <i>Georgetown University, 1951</i>	District of Columbia
POPPIC, ROBERT WILLIAM, B.A., <i>University of North Dakota, 1953; University of North Dakota Medical School, 1951-1953</i>	North Dakota
PRATT, CHARLES BENTON, JR., A.B., <i>University of North Carolina, 1951</i>	North Carolina

RASKIN, JOAN, A.B., <i>Goucher College, 1951</i>	Maryland
SAMORODIN, VIOLET SELMA, B.S., <i>University of Maryland, 1953</i>	Maryland
SAX, ALBERT MORTON, B.S., <i>Western Reserve University, 1951</i>	Maryland
SCHANBERGER, JOHN EDWARD, A.B., <i>Loyola College, 1951</i>	Maryland
SHIREY, ROBERT GARLAND, B.S., <i>West Virginia University, 1951</i>	West Virginia
SMALL, RICHARD ELWOOD, A.B., <i>Getylsburg College, 1951</i>	Pennsylvania
SNYDER, CLOVIS MARENE, A.B., <i>Washington and Lee University, 1951</i>	Maryland
SPOCK, ALEXANDER, B.S., <i>Loyola College, 1951</i>	Pennsylvania
STAGGERS, PHILLIP GARY, B.S., <i>University of Maryland, 1953</i>	West Virginia
STERLING, WILLIAM NORTON, B.S., <i>George Washington University, 1951</i>	District of Columbia
STEWART, DONALD WALLACE, B.S., <i>Morgan State College, 1951</i>	Maryland
STITCHER, JOSEPH EDWARD, B.S., <i>University of Maryland, 1953</i>	Maryland
SUSSMAN, KARL EDGAR, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
THORPE, PETER VAN BOEKEL, A.B., <i>Brown University, 1941</i>	Maryland
WALTON, FRED RICHARD, A.B., <i>Indiana University, 1950</i>	Indiana
WARD, ANN MARIE, A.B., <i>Barnard College, 1951</i>	New Jersey
WELLING, CHARLES CLARK, B.S., <i>University of Utah, 1951</i>	Utah
YOUSEM, HERBERT LEONARD, A.B., <i>Johns Hopkins University, 1951</i>	Maryland

~~JUNIOR CLASS, SEPTEMBER 16, 1954 TO JUNE 4, 1955~~

ABESHOUSE, GEORGE ALAN, A.B., <i>Yale University, 1952</i>	Maryland
ADAMS, JOHN EDWARD, B.S., <i>University of Maryland, 1954</i>	Maryland
ADKINS, ROBERT THOMAS, B.S., <i>University of Maryland, 1952</i>	Maryland
ANDERSON, DANIEL GILLIFORD, B.S., <i>Muskingum College, 1952</i>	Pennsylvania
BAER, HENRY ALLEN, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
BARCHET, STEPHEN, <i>Brown University</i>	Illinois
BELGRAD, RICHARD, B.S., <i>Loyola College, 1954</i>	Maryland
BELLOMO, FRANK ROCCO, B.S., <i>Loyola College, 1952</i>	New Jersey
BENNON, JERALD HORNE, B.S., <i>University of Utah, 1952</i>	Utah
BIALEK, STANLEY MORRIS, B.S., <i>George Washington University, 1952</i>	District of Columbia
BLUE, MORRIS LARRIE, B.S., <i>University of Maryland, 1952</i>	Maryland
BONGARDT, HENRY FRANCIS, JR., A.B., <i>Loyola College, 1952</i>	Maryland
BROWN, ERNEST OWEN, B.S., <i>Morgan State College, 1952</i>	Maryland
BURNINGHAM, RICHARD ALVIN, A.B., <i>University of Southern California, 1951</i>	California
BURWELL, JAMES ABRAHAM, A.B., <i>University of Pittsburgh, 1952</i>	Pennsylvania
BYRNE, ROBERT JAMES, B.S., <i>University of Maryland, 1954</i>	Maryland
CARSKI, THEODORE ROBERT, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
CASTELLANO, JAMES, JR., B.S., <i>University of Maryland, 1954</i>	New York
CHASE, JAMES MCALLISTER, JR., B.S., <i>University of Maryland, 1954</i>	Delaware
COHEN, WILLIAM, B.S., <i>University of Maryland, 1954</i>	Maryland
COHEN, WILLIAM COLEMAN, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
COLLAWN, THOMAS HERBERT, B.S., <i>University of Maryland, 1954</i>	Maryland
DAVIDSON, DAVID LEE, A.B., <i>Cornell University, 1952</i>	Maryland
DORSEY, JAMES THOMAS, A.B., <i>Wesleyan University, 1952</i>	Maryland
DOWNING, JOHN DENT, JR., B.S., <i>University of Maryland, 1952</i>	Maryland
EGLSEDER, LUDWIG JOSEPH, <i>University of Maryland</i>	Maryland
ESTES, JAMES TILFORD, <i>University of Maryland</i>	Maryland
FARMER, RICHARD GILBERT, <i>Indiana University</i>	Indiana
FINEGOLD, RICHARD ALLEN, <i>University of Pittsburgh</i>	Pennsylvania
FOSTER, GIRAUD VERNAM, B.S., <i>Trinity College, 1952</i>	Maryland
FRANCO, JORGE ALFONSO, <i>University of Puerto Rico</i>	Puerto Rico
FRANKLIN, MARSHALL BURTON, B.S., <i>Franklin and Marshall College, 1952</i>	Maryland
FROHLICH, EDWARD DAVID, A.B., <i>Washington and Jefferson College, 1952</i>	Maryland
GRIGOLEIT, ALFRED WILLIAM, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
HAWKINS, JOSIAS HENRY, JR., A.B., <i>George Washington University, 1952</i>	Maryland
HEADLEY, ROBERT NELSON, B.S., <i>University of Maryland, 1954</i>	Maryland
HENDERSON, NEIL CARLTON, B.S., <i>University of Maryland, 1954</i>	New York
HERSPERGER, WEBB SELLMAN, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
HOFFMAN, LEE, B.A., <i>University of Maryland, 1952</i>	Maryland
HOOPER, VIRGIL ROY, <i>West Virginia University</i>	West Virginia
HUMMEL, RALPH TURNER, B.S., <i>University of Maryland, 1954</i>	Maryland
HURWITZ, GILBERT EARL, B.S., <i>University of Maryland, 1954</i>	Maryland

IVENS, BETTY IRENE, B.S., <i>Washington College, 1952</i>	Maryland
JOHNSTON, DANIEL FULPER, A.B., <i>Princeton University, 1952</i>	Maryland
KANNER, ALBERT VICTOR, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
KAPLAN, ROBERT MARTIN, A.B., <i>University of Michigan, 1952</i>	Maryland
KELLAM, SHEPPARD GORDON, B.S., <i>Loyola College, 1954</i>	Maryland
KELLY, JOHN EDWARD, JR., B.S., <i>University of Notre Dame, 1952</i>	New York
KING, CHARLES HERSCHEL, B.S., <i>University of Maryland, 1954</i>	Maryland
KLATT, KENNETH MUNSON, <i>University of Delaware</i>	Maryland
KNOWLES, PAUL WILLIAM, <i>University of Utah</i>	Utah
KOLLER, ELMER CURTIS, JR., B.S., <i>University of Maryland, 1951</i>	Maryland
KRAMER, BERNARD, A.B., <i>Johns Hopkins University, 1951</i>	Maryland
KRAMER, H. COLEMAN, B.S., <i>University of Maryland, 1954</i>	Maryland
KRESS, SCHELDON, B.S., <i>University of Maryland, 1952</i>	District of Columbia
LANCASTER, LOUIS JAMES, B.S., <i>Virginia Polytechnic Institute, 1952</i>	Maryland
LANZI, JOSEPH GABRIEL, B.S., <i>Loyola College, 1954</i>	Maryland
LAUGHLIN, CARL PATRICK, <i>West Virginia University</i>	West Virginia
LEE, MATHEW HUNG MUN, <i>Johns Hopkins University</i>	Hawaii
LEMMERT, WILLIAM ARDEN, B.S., <i>University of Maryland, 1952</i>	Maryland
LITTLETON, JOHN BRECKENRIDGE, B.S., <i>University of Maryland, 1952</i>	Maryland
LLOYD, WILLIAM THOMAS, B.S., <i>University of Maryland, 1952</i>	Maryland
LOVE, THOMAS ANKARCORNA, <i>University of Maryland</i>	Maryland
MAGGID, GERALD NORTON, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
MAHON, ROBERT JOSEPH, B.S., <i>University of Maryland, 1954</i>	Maryland
MANGUS, SAMUEL JAMES, <i>Washington College</i>	Maryland
MARTON, HERBERT MILES, A.B., <i>Brown University, 1952</i>	New York
MC Laughlin, JOSEPH SHEFFER, B.S., <i>Loyola College, 1954</i>	Maryland
MUTH, ROBERT GABRIEL, <i>Loyola College</i>	Maryland
MYERS, RICHARD IRA, B.S., <i>George Washington University, 1952</i>	Pennsylvania
NOWELL, JOHN FRANCIS, B.S., <i>University of Maryland, 1954</i>	Maryland
OSTEEN, CLARK LAMONT, B.S., <i>University of Maryland, 1954</i>	Maryland
OURSLEER, DAVID ALAN, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
PALMER, WILLIAM MARTIN, <i>University of Utah</i>	Maryland
PICKETT, WILBUR CRAFTS, JR., B.S., <i>Washington and Lee University, 1952</i>	Maryland
PLATT, MARVIN STANLEY, B.S., <i>University of Maryland, 1951</i>	Maryland
PUMB, RICHARD LEON, B.S., <i>Randolph-Macon College, 1952</i>	District of Columbia
POLLACK, IRVIN PAUL, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
REAH, GEORGE EDWARD, JR., B.S., <i>Loyola College, 1954</i>	Maryland
RODMAN, HAROLD IRVIN, A.B., <i>Johns Hopkins University, 1952</i>	Maryland
ROSS, HARRY PAUL, B.S., <i>University of Maryland, 1954</i>	Maryland
SANISLOW, CHARLES ANDREW, JR., B.S., <i>Rutgers University, 1952</i>	New Jersey
SCHUSTER, GERALD DAVID, B.S., <i>University of Maryland, 1952</i>	Maryland
SHAUB, ROY OTIS, <i>University of Utah</i>	Utah
SINTON, WILLIAM ALLEN, JR., B.S., <i>College of William & Mary, 1952</i>	Maryland
SKAGGS, JAMES WILLIAM, JR., A.B., <i>West Virginia University, 1952</i>	West Virginia
SLATER, PAUL VERNON, A.B., <i>West Virginia University, 1952</i>	West Virginia
SMITH, GEORGE THOMAS, B.S., <i>University of Maryland, 1954</i>	West Virginia
SOWELL, GEORGE ALEXANDER, B.S., <i>The Citadel, 1952</i>	Maryland
STOVIN, JAMES JOSEPH, A.B., <i>Yale University, 1952</i>	New York
STUCK, ROBERT GEORGE, B.S., <i>Washington College, 1952</i>	New York
STURGEON, HOWARD ELBERT, A.B., <i>University of Virginia, 1952</i>	Maryland
TRAINIS, EVELYN ANNA, A.B., <i>Goucher College, 1952</i>	Maryland
TRUITT, VIRGINIA HARRINGTON, B.S., <i>University of Maryland, 1952</i>	Maryland
WHITEFORD, EDWIN WARFIELD, JR., B.S., <i>University of Maryland, 1952</i>	Maryland
WILLIAMS, JOHN ZIGLER, B.S., <i>University of Maryland, 1954</i>	Maryland
WILSON, HARRY DAVIS, JR., A.B., <i>Amherst College, 1952</i>	Maryland
WRIGHT, ROBERT LEE, B.S., <i>Kent State University, 1951</i>	Ohio

Journal
SOPHOMORE CLASS, SEPTEMBER 16, 1954 TO JUNE 4, 1955

ABRAHAMS, STUART JOEL, A.B., <i>Western Maryland College, 1953</i>	Maryland
AFTANDILIAN, EMIL EMANUEL, <i>University of Maryland</i>	Iran
ALLEN, CHARLES JAMES, A.B., <i>Johns Hopkins University, 1953</i>	New Jersey
BALCO, SELINA GLORIA, B.S., <i>University of Maryland, 1953</i>	Maryland
BATHON, BERNARD NEIL, B.S., <i>Loyola College, 1953</i>	Maryland

BEEBY, JAMES LEONARD, B.S., <i>University of Maryland</i> , 1953.....	Maryland
BERGER, RONALD RICHARD, <i>University of Maryland</i>	Maryland
BORMEL, PAUL, B.S., <i>University of Maryland</i> , 1953.....	Maryland
BOUZOUKIS, JAMES KOSTAS, A.B., <i>Harvard College</i> , 1952.....	New Hampshire
BROOKS, HERBERT EDWIN, A.B., <i>Wabash College</i> , 1951.....	Maryland
BUCY, DONALD LOUIS, B.S., <i>Georgetown University</i> , 1953.....	Maryland
BULKELEY, JOHN THOMAS, B.S., <i>Salisbury State Teachers College</i> , 1951.....	Maryland
BURCHELL, MARY CECILIA, A.B., <i>Columbia University</i> , 1951.....	Massachusetts
BUTT, HARVEY RUDOLPH, JR., <i>University of Maryland</i>	Maryland
CALCIANO, ANTHONY JAMES, <i>University of Vermont</i>	Connecticut
CAMERON, RONALD ROSS, A.B., <i>Johns Hopkins University</i> , 1953.....	Maryland
CARLIN, ROBERT ANTHONY, <i>University of Maryland</i>	New Jersey
CHUN, GAYNE, A.B., <i>Boston University</i> , 1951; M.S., <i>University of Wisconsin</i> , 1953.....	Hawaii
COHEN, MARVIN, B.S., <i>University of Maryland</i> , 1955.....	Maryland
CONWAY, JOHN VINCENT, B.S., <i>University of Delaware</i> , 1952.....	Delaware
DEAN, JOSEPH OLIVER, JR., B.S., <i>University of Maryland</i> , 1955.....	Maryland
ENGNOTH, MILTON LORING, B.S., <i>University of Maryland</i> , 1955.....	Maryland
ERICSSON, ARTHUR DALE, B.S., <i>University of Miami</i> , 1953.....	Florida
FELDSTEIN, MARVIN ALLEN, <i>Loyola College</i>	Maryland
FIOCO, VINCENT JAMES, <i>Columbia University</i>	New York
FITCH, HARRY JOHN, B.S., <i>University of Maryland</i> , 1951.....	Maryland
GALLO, SEBASTIAN JOHN, A.B., <i>Johns Hopkins University</i> , 1953.....	Connecticut
GARCIA, NICOLAS ANTONIO, III, A.B., <i>Johns Hopkins University</i> , 1953.....	Puerto Rico
GAUTHIER, DONALD WILLIAM, A.B., <i>St. Anselm's College</i> , 1953.....	New Hampshire
GERBER, ALLEN SIDNEY, B.S., <i>University of Maryland</i> , 1955.....	Maryland
GILBERT, VERNE EPHRAIM, A.B., <i>University of California</i> , 1953.....	California
GILMORE, LORETTA ANN KURZ, B.S., <i>University of Maryland</i> , 1950.....	Maryland
HAMBLIN, ELDON BENORR, B.S., <i>University of Utah</i> , 1953.....	Arizona
HAMMANN, JOHN HENRY, JR., B.S., <i>Loyola College</i> , 1953.....	Maryland
HAMMOND, ANTHONY FRANCIS, JR., B.S., <i>Seton Hall University</i> , 1953.....	New Jersey
HANASHIRO, PAUL KATSUTO, A.B., <i>Indiana University</i> , 1953.....	Hawaii
HENDERSON, CHARLES MORGAN, B.S., <i>University of Maryland</i> , 1955.....	Maryland
HETTLEMAN, HAROLD JACK, B.S., <i>Loyola College</i> , 1953.....	Maryland
HICKMAN, ROBERT OTHELLO, A.B., <i>University of Utah</i> , 1951.....	Utah
HO, RICHARD KOON BOW, A.B., <i>University of Hawaii</i> , 1951; M.S., <i>University of Hawaii</i> , 1953.....	Hawaii
HOLDEFER, WILFRED FERBER, JR., B.S., <i>Loyola College</i> , 1952.....	Maryland
JELENKO, CARL, III, B.S., <i>Loyola College</i> , 1953.....	Maryland
JONES, NORMAN PAUL, <i>Georgetown University</i>	Maryland
KAHAN, EDWIN LOUIS, B.S., <i>University of Maryland</i> , 1953.....	Maryland
KENNEDY, WILLIAM FRANK, JR., B.S., <i>Bates College</i> , 1952.....	Maine
KOGAN, LEONARD LOUIS, <i>Dartmouth College</i>	Maryland
KRONTHAL, HERBERT LEE, B.S., <i>University of Maryland</i> , 1955.....	Maryland
LANSINGER, DONALD TYSON, <i>Loyola College</i>	Maryland
LARGEY, DAVID POOLE, A.B., <i>Washington and Lee University</i> , 1950.....	Pennsylvania
LASTER, JAMES PRESTON, B.S., <i>Loyola College</i> , 1948.....	Maryland
LAUGHLIN, JOSEPH CHORPENING, <i>West Virginia University</i>	West Virginia
LENTZ, GEORGE ALVIN, JR., A.B., <i>Johns Hopkins University</i> , 1953.....	Maryland
LERNER, SIDNEY ISAAC, B.S., <i>University of Maryland</i> , 1953.....	Maryland
LEVIN, RICHARD LEONARD, B.S., <i>University of Maryland</i> , 1953.....	Maryland
LYNCH, PETER PAUL, <i>Mount St. Mary's College</i>	Massachusetts
MACEK, FRANCIS JOHN, JR., B.S., <i>Loyola College</i> , 1953.....	Maryland
MEHLHOP, FRED HENRY, A.B., <i>Johns Hopkins University</i> , 1953.....	New York
MOOMAU, FREDERICK, A.B., <i>West Virginia University</i> , 1953.....	West Virginia
MULLAN, PAUL ALOYSIUS, B.S., <i>Seton Hall University</i> , 1952.....	New Jersey
NASDOR, HERBERT HARVEY, <i>Loyola College</i>	Maryland
NEALE, LEONARD ERNEST, III, B.S., <i>University of Maryland</i> , 1953.....	Maryland
NIZNIK, THEODORE THADDEUS, JR., B.S., <i>Loyola College</i> , 1953.....	Maryland
OLIVERAS-ARMSTRONG, FRANCISCO ENRIQUE, <i>University of Puerto Rico</i>	Puerto Rico
OPPEGARD, CHARLES ROGER, B.S., <i>University of Maryland</i> , 1955.....	Maryland
PLUGGE, FREDERICK WILLIAM, IV, A.B., <i>University of Pennsylvania</i> , 1953.....	District of Columbia
POLAND, WARREN SAUL, B.S., <i>University of Maryland</i> , 1955.....	Maryland

QUINONES-SEGARRA, JOSE GEORGINO, B.S., <i>University of Puerto Rico</i> , 1953.	Puerto Rico
RAIRIGH, DONALD WILSON, <i>Johns Hopkins University</i> .	Maryland
RALEIGH, JOHN JOSEPH, B.S., <i>Roanoke College</i> , 1952.	New York
RANDALL, LOUIS LEROY, B.S., <i>Morgan State College</i> , 1953.	Maryland
RAPPOPORT, WILLIAM JOSEPH, A.B., <i>Johns Hopkins University</i> , 1953.	Maryland
REBA, RICHARD CHARNEY, <i>Loyola College</i> .	Maryland
RESTIVO, MARION CHARLES, A.B., <i>Loyola College</i> , 1953.	Maryland
REVER, GEORGE WRIGHT, B.S., <i>University of Maryland</i> , 1950.	Maryland
ROBINSON, LYNN BENNION, B.S., <i>University of Utah</i> , 1953.	Utah
SCHMUKLER, MORTON, A.B., <i>Johns Hopkins University</i> , 1953.	Maryland
SCHOCKET, LEE IRWIN, B.S., <i>University of Maryland</i> , 1955.	Maryland
SCHWARTZ, FRANKLIN DAVID, B.S., <i>University of Maryland</i> , 1955.	Maryland
SHAPIRO, MORTON WALTER, B.S., <i>University of Maryland</i> , 1955.	Maryland
SHAW, GEORGE PATRICK, B.S., <i>Alma College</i> , 1953.	Michigan
SHAW, WALTER MORGAN, A.B., <i>Lafayette College</i> , 1951.	Ohio
SHEAR, LEROY, A.B., <i>Johns Hopkins University</i> , 1953.	Maryland
SIEGEL, HOWARD SHELDON, A.B., <i>Western Reserve University</i> , 1953.	Ohio
SIMMONS, WILLIAM ARTHUR, A.B., <i>West Virginia University</i> , 1953.	West Virginia
SPENCE, KENNETH FRANKLIN, JR., B.S., <i>Washington and Lee University</i> , 1953.	Maryland
SPENCER, MATTLAND G., B.S., <i>Brigham Young University</i> , 1953.	Utah
SPENCER, MAX JAY, B.S., <i>University of Utah</i> , 1952.	Utah
STANG, MARY LOUISE, B.S., <i>University of Maryland</i> , 1953.	Maryland
STOUT, LANDON CLARKE, JR., <i>University of Maryland</i> .	Maryland
STRINGHAM, JAMES GRANT, B.S., <i>University of Utah</i> , 1952.	Utah
TODD, NEVINS WOODCOCK, JR., <i>Syracuse University</i> .	Maryland
TRUPP, MICHAEL SARON, A.B., <i>Western Maryland College</i> , 1953.	Maryland
WILNER, HARVEY IRA, <i>New York University</i> ; <i>University of Vermont</i> .	New York
WILSON, RAY AUSTIN, A.B., <i>Johns Hopkins University</i> , 1953.	Pennsylvania
YOUNG, VIRGINIA ELIZABETH, A.B., <i>Vassar College</i> , 1953.	Maryland
ZULLO, LEONARD MICHAEL, B.S., <i>University of Maryland</i> , 1955.	Maryland

Sophomore
FRESHMAN CLASS, September 16, 1954 to June 4, 1955

ALEXANDER, JOHN THOMAS, <i>Brigham Young University</i> .	Arizona
ATON, JAMES KEYES, B.A., <i>Emory University</i> , 1954.	Florida
BACHUR, NICHOLAS ROBERT, B.A., <i>The Johns Hopkins University</i> , 1954.	Maryland
BARTLETT, WILLIAM GEORGE, <i>University of Maryland</i> .	Maryland
BAUMGARDNER, GEORGE ROBERT, <i>University of Maryland</i> .	Maryland
BERG, ELLIOTT MORTON, <i>University of Maryland</i> .	Maryland
BERMAN, MAURICE JERROLD, B.S., <i>University of Maryland</i> , 1953.	Maryland
BLOOM, GERALD EDWARD, <i>Cornell University</i> .	Maryland
BRAGER, STUART HARMON, B.S., <i>University of Maryland</i> , 1954.	Maryland
BRONSTEIN, HOWARD DANIEL, <i>University of Maryland</i> .	Maryland
BURKE, GEORGE JAMES, B.S., <i>University of Maryland</i> , 1954.	Maryland
CAPLAN, RAYMOND FRANK, <i>University of Maryland</i> .	Maryland
CLARK, GAYLORD LEE, JR., B.A., <i>The Johns Hopkins University</i> , 1953; <i>Stanford University</i> .	Maryland
COPE, DAVID ARTHUR, B.A., <i>Lafayette College</i> , 1954.	Pennsylvania
CRANLEY, ROBERT EMMET, <i>University of Maryland</i> .	New Jersey
CURTIS, BRUCE NELSON, B.A., <i>Brigham Young University</i> , 1954.	Arizona
CUSHNER, GILBERT BERNARD, <i>The Johns Hopkins University</i> .	Maryland
DAMM, ROBERT LEE, B.S., <i>University of Maryland</i> , 1954.	Maryland
DAY, JOHN RONALD, JR., <i>University of Maryland</i> .	Maryland
DELLI-PIZZI, GREGORY MICHAEL, <i>University of Maryland</i> .	New York
DIENER, RONALD LEE, <i>University of Maryland</i> .	Maryland
DONOVAN, RAYMOND JOSEPH, JR., B.A., <i>Saint Peter's College</i> , 1954.	New Jersey
ERICKSON, RICHARD JAMES, B.S. <i>Maryville College</i> , 1954.	New Jersey
FARB, STANLEY NORMAN, <i>The Johns Hopkins University</i> .	Maryland
FILAR, ALFRED ANTHONY, JR., B.S., <i>Loyola College</i> , 1954.	Maryland
FISHKIN, HAROLD LARRY, <i>University of Maryland</i> .	Maryland
FLYNN, RICHARD ROWAN, <i>University of Utah</i> .	Utah
FRIEDLANDER, HARVEY LEE, <i>University of Maryland</i> .	Maryland
GEE, MALCOLM VAN NORMAN, B.S., <i>Howard University</i> , 1953.	Maryland
GOLDBERG, NEIL MORTON, <i>University of Maryland</i> .	Maryland
GOLDBEIER, SHELDON, <i>University of Maryland</i> .	Maryland

GOLDSTEIN, BARRETT, A.B., <i>The Johns Hopkins University, 1954</i>	Maryland
GREENE, FRANK PHILIP, <i>The George Washington University</i>	Maryland
HALE, MEREDITH SAFFELL, B.S., <i>University of Maryland, 1954</i>	Maryland
HALL, WILLIAM POPPLEIN, III, B.S., <i>Union College, 1954</i>	Maryland
HARSHY, JOHN SIMPSON, A.B., <i>Catawba College, 1954</i>	Pennsylvania
HECK, ALBERT FRANK, B.A., <i>The Johns Hopkins University</i>	Maryland
HICKEN, WILLIAM JOSEPH, B.A., <i>Loyola College, 1954</i>	Maryland
HOLMES, ARTHUR CLARK LOPER, <i>Wheaton College</i>	Pennsylvania
JOHNSON, ROBERT HARVEY, JR., B.A., <i>Duke University, 1954</i>	Maryland
KARPA, JAY NORMAN, <i>The Johns Hopkins University</i>	Maryland
KELLER, RICHARD HUBBARD, <i>University of Utah</i>	Utah
KELSH, JAMES MICHAEL, A.B., <i>Columbia University, 1951; Univ. of Maryland</i>	Maryland
KELSO, JAMES JUDE, <i>University of Maryland</i>	Maryland
KRIZ, FRANK KENNETH, JR., <i>University of Maryland</i>	Maryland
LEVIN, DANIEL MELVIN, B.S., <i>University of Maryland, 1954</i>	Maryland
LEVIN, HOWARD STANLEY, B.A., <i>Bowdoin College, 1954</i>	Maryland
LITOFKY, ARTHUR, B.S., <i>University of Maryland, 1954</i>	Maryland
MACON, ROBERT CARPENTER, B.S., <i>The George Washington University, 1954</i>	District of Columbia
MAILMAN, CHARLES JACOB, B.A., <i>Franklin & Marshall College, 1954</i>	Maryland
MANGER, DONALD FREDERICK, B.A., <i>The Johns Hopkins University, 1954</i>	Maryland
MARSHALL, WILLIAM JOHN, JR., B.S., <i>Muskingum College, 1954</i>	Ohio
MCDONALD, JOHN ETCHISON, B.A., <i>Washington and Lee University, 1954</i>	Maryland
MCINERNEY, GERALD TIMOTHY, A.B., <i>West Virginia University, 1954</i>	New York
MEAD, JOSEPH ANTHONY, JR., B.A., <i>Loyola College, 1954</i>	Maryland
MERENDINO, JOHN JEROME, <i>University of Maryland</i>	Maryland
MOORE, ERNEST EUGENE, A.B., <i>West Virginia University, 1954</i>	West Virginia
MULVANEY, ROBERT BERNARD JOSEPH, B.A., <i>Seton Hall University, 1954</i>	New Jersey
ORTEL, ROY WADE, B.A., <i>Gettysburg College, 1951</i>	Maryland
ORTH, JOHN GOEDEKE, B.S., <i>University of Maryland, 1954</i>	Maryland
OTTINGER, AYLAND MIDGLEY, <i>University of Utah</i>	Utah
PARKER, CHARLES EDWIN, B.A., <i>University of Utah, 1953</i>	California
PEREZ-SANTIAGO, ANTONIO, <i>University of Puerto Rico</i>	Puerto Rico
POTASH, MICHAEL DONALD, <i>University of Maryland</i>	Maryland
RAUH, JAY THOMAS, <i>University of Maryland</i>	Maryland
REEDER, MAURICE MERRICK, B.A., <i>Loyola College, 1954</i>	Maryland
RICHMOND, LEWIS HILLIARD, <i>University of Maryland</i>	Maryland
ROBL, ROBERT JOSEPH, <i>University of Maryland</i>	Maryland
ROLL, HAROLD, <i>University of Maryland</i>	Maryland
SEARLES, VICTORIA ANN, B.A., <i>University of New York, 1952</i>	Pennsylvania
SHEPPERD, JAMES DOUGLASS, JR., B.A., <i>University of Pennsylvania, 1954</i>	Maryland
SILBERSTEIN, CHARLES ELIOT, A.B., <i>Western Maryland College, 1954</i>	Maryland
SUTTON, GRANGER GIDEON, JR., B.S., <i>Massachusetts Institute of Technology, 1954</i>	District of Columbia
SWANSON, RAYMOND ELMER, B.A., <i>Valparaiso University, 1951; M.S., Wayne University, 1954</i>	Illinois
TAYLOR, JAMES EDGAR, JR., <i>University of Maryland</i>	Maryland
TILLES, JEROME, <i>University of Maryland</i>	Maryland
TYLER, JAMES HAROLD, B.A., <i>University of Vermont & State Agricultural College, 1954</i>	Connecticut
WARD, WILLIAM TODD, <i>University of Maryland</i>	Maryland
WEYN, ADRIAN SALTZMAN, A.P., <i>Gettysburg College, 1954</i>	Maryland
WOLFE, RICHARD LOUIS, B.S., <i>William and Mary College, 1952</i>	Maryland
ZIEVE, PHILIP DAVID, B.A., <i>Franklin and Marshall College, 1954</i>	Maryland
ZIMMERMAN, JAMES BENSON, B.S., <i>University of Cincinnati, 1954</i>	Ohio

INTRAMURAL POSTGRADUATE STUDENTS

September 1954 to June 1955

BASIC SCIENCES AS THEY APPLY TO THE PRACTICE OF MEDICINE

ABRAJANO, QUIRILLO, JR., Zambales, Philippines Santo Tomas Univ.
M.D.

ALDIS, HENRY, M.D.	Lovettesville, Virginia	<i>Univ. of Kansas</i>
ANDERSON, TWIDLYN J., M.D.	Jamaica, B. W. I.	<i>Meharry Medical College</i>
AZPIROZ, JOAQUIN, M.D.	Baltimore, Maryland	<i>University of Mexico</i>
BARTHEL, ROBERT, M.D.	Forest Hill, Maryland	<i>University of Maryland</i>
BOENNEC, YVES HERVE, M.D.	Paris, France	<i>Faculte de Med. de Paris</i>
BRADY, FRANK J., M.D.	Baltimore, Maryland	<i>University of Maryland</i>
CONSTANTARAS, EVANGELOS, M.D.	Kastella, Greece	<i>Salonica University, Greece</i>
DALY, HAROLD L., M.D.	Baltimore, Maryland	<i>University of Maryland</i>
DAVID, PRIMO K., M.D.	Pampanga, Philippines	<i>Santo Tomas Univ.</i>
DE LA CRUZ, MARIANO V., Jr., M.D.	Quezon City, Philippines	<i>Univ. of Philippines</i>
DEZA, FELIPE M., M.D.	Buenos Aires, Argentina	<i>Univ. de Buenos Aires</i>
ELLISON, EMANUEL SIMON, M.D.	Baltimore, Maryland	<i>Univ. of Maryland</i>
ESMOND, WILLIAM G., M.D.	Baltimore, Maryland	<i>University of Maryland</i>
FITZGERALD, JOSEPH CARROLL, M.D.	Baltimore, Maryland	<i>University of Maryland</i>
GARCIA, JOSE T., M.D.	Pampanga, Philippines	<i>Santo Tomas Univ.</i>
GARCIA, RAFAEL, M.D.	Zaragoza, Spain	<i>Univ. of Zaragoza</i>
GLUCK, JULIUS C., M.D.	Baltimore, Maryland	<i>University of Brussels</i>
GOLOJUCK, SEVERIN T., M.D.	Middlesex, N. J.	<i>N. Y. U. Med. College</i>
GRAY, JAMES LEVI, M.D.	Baltimore, Maryland	<i>Univ. of Cincinnati</i>
GUTERMAN, HAROLD L., M.D.	Washington, D. C.	<i>Univ. Lausanne, Switzerland</i>
HARRIGAN, JOHN THOMAS, M.D.	Middlesex, N. J.	<i>George Washington Univ.</i>
JEUDY, TURGOT L., M.D.	Port Au Prince, Haiti	<i>Med. School of Haiti</i>
KESSLER, WILLIAM A., M.D.	Cincinnati, Ohio	<i>Univ. of Cincinnati</i>
LALLANA, RAMON D., M.D.	Cavite City, Philippines	<i>Univ. of Philippines</i>
MARTIN, EBERHARD KARL, M.D.	Berlin, Germany	<i>Univ. of Berlin</i>
MASUKAWA, TERU, M.D.	Nagoya, Japan	<i>Nat. Univ. Nagoya</i>
MITRA, RIZOLINA A., M.D.	Dauao City, Philippines	<i>Univ. of Philippines</i>
MOONEY, FELIX PATRICK, M.D.	Baltimore, Maryland	<i>Univ. of Illinois</i>
NIPKOW, HANS, M.D.	Danzig, Germany	<i>Ludwig Maximilian Univ.</i>
NOTANI, TULSI KISHIN CHANG, M.D.	Bombay, India	<i>Lady Harding Med. College</i>
ORNES, JOSE HORACIO, M.D.	Dominican Republic	<i>Santo Domingo Univ.</i>
OSSMAN, ALFRED GEORGE, M.D.	Baltimore, Maryland	<i>Johns Hopkins Med. School</i>
PALACIOS, ENRIQUE, M.D.	Mexico D.F., Mexico	<i>Mexico Nat. Univ.</i>
PERALTA, CONRADO N., M.D.	Manila, Philippines	<i>Univ. of Santo Tomas</i>
PHILLIPS, DUDLEY M., M.D.	Darlington, Md.	<i>Univ. of Maryland</i>
PINEDA, ESTEBAN P., M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
QUINONES, RAFAEL, M.D.	Colombia, South America	<i>Nat. Univ. of Colombia</i>
RELLE, MATYAS, M.D.	Munich, Germany	<i>Univ. of Munich</i>
RODMAN, PETER P., M.D.	Aberdeen, Maryland	<i>Univ. of Penna.</i>
RODRIGUEZ, JAVIER, M.D.	Lima, Peru	<i>Univ. Mayor de San Marcos</i>
ROSSELLO, SALVADOR, M.D.	Santurce, Puerto Rico	<i>New York Med. College</i>
SADRANANDA, VATANA, M.D.	Bangkok, Siam	<i>Chulalongkorn Med. School</i>
ULLOA, ALEXANDER, M.D.	Ruimillo, Peru	<i>Univ. Mayor de San Marcos</i>
ULYSSE, GERARD, M.D.	Port Au Prince, Haiti	<i>Univ. of Haiti</i>
URUSHIAZAKI, ICHIRO, M.D.	Nerima-ku, Tokyo, Japan	<i>Hokkaido Univ.</i>
VASQUEZ, CESAR S., M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
WILSON, EMILY H., M.D.	Harwood, Maryland	<i>Univ. of Georgia</i>

SURGICAL ANATOMY

ATNIP, GWYN, M.D.	East Paragould, Ark.	<i>Univ. of Arkansas</i>
BLAIN, DONALD G., M.D.	Grosse Pointe Park, Mich.	<i>Wayne Medical School</i>
BOENNEC, YVES H., M.D.	Paris, France	<i>Faculte de Med. de Paris</i>
CLOUGH, LEWIS ROBERT, M.D.	Memphis, Tenn.	<i>Univ. of Tennessee</i>
COLES, JOHN H., M.D.	Nashville, Tenn.	<i>Vanderbilt Univ.</i>
DEBORJA, PEDRO S., M.D.	Manila, Philippines	<i>Santo Tomas Univ.</i>
FARES, LOUIS G., M.D.	Trenton, N. J.	<i>Georgetown Univ.</i>
FARRALES, EPIFANIO V., M.D.	Zambalis, Philippines	<i>Manila Central Univ.</i>
FLAX, LEONARD, M.D.	Pocomoke City, Md.	<i>Univ. of Maryland</i>
GOCO, ROMULO V., M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
GROW, JOHN L., M.D.	Baltimore, Md.	<i>Johns Hopkins Med. School</i>
JEUDY, TURGOT L., M.D.	Port Au Prince, Haiti	<i>Med. School of Haiti</i>
KAKVAN, MOHAMED, M.D.	Ramsar, Iran	<i>Tehran University</i>
KISON, ANTONIO L., M.D.	Manila, Philippines	<i>Univ. of Philippines</i>
KRAMER, HOWARD B., M.D.	Baltimore, Md.	<i>University of Maryland</i>
MIDDLETON, B. MARTIN, M.D.	Waldorf, Maryland	<i>University of Maryland</i>
PIPIIS, GEORGE JOANNOU, M.D.	Arghaki, Morphou, Cyprus	<i>Univ. of Athens, Greece</i>
RAFFUL, ELIAS, M.D.	Carmen Cam, Mexico	<i>Univ. of Mexico</i>
RELLE, MATYAS, M.D.	Gyor, Hungary	<i>Univ. of Munich</i>
TIDLER, HAROLD S., M.D.	Lanham, Maryland	<i>George Washington Univ.</i>

GYNECOLOGY

McNAMARA, RONALD JOHN, M.D.	Charleston, W. Va.	<i>St. Louis Univ.</i>
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NEUROPATHOLOGY

WAHAL, KRISHNA, MOHAN, M.D.	Uttar, Pradesh, India	<i>Lucknow University, India</i>
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ANATOMY OF HEAD AND NECK

MELVIN H. BULMASH, D.D.S.	Baltimore, Maryland	<i>Univ. of Maryland</i>
---------------------------	---------------------	--------------------------

EXPERIMENTAL SURGERY

<i>From Baltimore City Hospitals</i>		
ALONSO-LEJ, FERNANDO, M.D.	Zaragoza, Spain	<i>Univ. of Zaragoza</i>
KESSLER, WILLIAM A., M.D.	Cincinnati, Ohio	<i>Univ. of Cincinnati</i>
PALACIOS, ENRIQUE, M.D.	Mexico D.F., Mexico	<i>Mexico Nat. Univ.</i>
<i>From Mercy Hospital</i>		
FLAX, LEONARD, M.D.	Pocomoke City, Md.	<i>Univ. of Maryland</i>
SCHINDLER, RICHARD E., M.D.	Cumberland, Md.	<i>Univ. of Maryland</i>

SUMMARY OF STUDENTS

September 16, 1954 to June 4, 1955

<i>Medical Students</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
Senior Class.....	96	4	100
Junior Class.....	97	3	100
Sophomore Class.....	92	4	96
Freshman Class.....	88	1	89
<hr/>			
Medical Students.....	373	12	385
Intramural Postgraduate Students.....	73	3	76
<hr/>			
	446	15	461

GEOGRAPHICAL DISTRIBUTION OF MEDICAL STUDENTS

September 16, 1954 to June 4, 1955

Arizona.....	3	North Carolina.....	2
California.....	3	North Dakota.....	2
Connecticut.....	6	Ohio.....	6
Delaware.....	3	Pennsylvania.....	14
District of Columbia.....	9	South Carolina.....	1
Florida.....	3	Utah.....	15
Illinois.....	2	Washington.....	2
Indiana.....	2	West Virginia.....	14
Kansas.....	1		
Maine.....	1		
Maryland.....	250		
Massachusetts.....	4		
Michigan.....	1		
New Hampshire.....	2		
New Jersey.....	14		
New York.....	14		

UNITED STATES POSSESSIONS

Hawaii.....	4
Puerto Rico.....	6

FOREIGN

Iran.....	1
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(Term beginning July 1, 1955 and ending June 30, 1956)

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J. HOWARD FRANZ, M.D.

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THURSTON R. ADAMS, M.D.
DANIEL J. PESSAGNO, M.D.

Representatives, Editorial Board, Bulletin

HARRY C. HULL, M.D.
ALBERT E. GOLDSTEIN, M.D.
J. MORRIS REESE, M.D., (ex-officio)

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(Here state amount or describe property)

TO SCHOOL OF MEDICINE

I give, devise and bequeath to the Regents of the University of Maryland, a corporation incorporated under the laws of the State of Maryland, for the benefit of the Faculty of Medicine.....

(Here state amount or describe property)

THE UNIVERSITY OF MARYLAND SCHOOL OF NURSING

The University of Maryland School of Nursing offers two programs of study: 1. A Basic Professional Program consisting of four calendar years leading to the degree of Bachelor of Science in Nursing, and 2. A Basic Program consisting of three calendar years leading to the Diploma in Nursing.

The Basic Professional Program extends over a period of four years. Students in this program complete two academic years of study on the College Park campus and the remaining two years on the Baltimore campus. Graduates of this curriculum are prepared for first-level positions in hospital nursing and as beginner-practitioners under supervision in public health nursing.

Graduates who have completed a minimum of two years of college work in other approved colleges may be admitted to this program.

The Basic Program extends over a three year period. This prepares the graduate for general nursing practice in hospitals or homes.

Graduates of either program are eligible to take the Maryland State Board Examinations for nurses.

The School of Nursing makes every effort to conform to the catalogue announcements, never-the-less the School reserves the right to adapt these programs to current needs.

For information regarding admissions, address inquiries to the Dean of the School of Nursing, University of Maryland, Baltimore 1, Maryland.

MERCY HOSPITAL SCHOOL OF NURSING

The Mercy Hospital School of Nursing was established 1899 and incorporated on December 23, 1901. It is an integral part of Mercy Hospital and is under the same government. It is accredited by the Maryland State Board of Examiners of Nurses and the National Nursing Accrediting Service.

Mercy Hospital affords exceptional advantages for the education of nurses. It is a general hospital containing 356 beds, and offers opportunities for a thorough and varied experience. By its institutional affiliation with the University of Maryland it secures professors who give to the student the results of their training and experience in the fields of the medical and related sciences.

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